

Killbear Provincial Park

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Master Plan

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Ministry of
Natural
Resources



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Killbear Provincial Park

Master Plan



Office of the
Minister

Ministry of
Natural
Resources

416/965-1301

Whitney Block
Queen's Park
Toronto Ontario

MINISTER'S APPROVAL STATEMENT

Killbear Provincial Park is an area of aesthetic and natural interest which has been preserved for the recreational and educational enjoyment of visitors. Located on a peninsula dividing Parry Sound and Georgian Bay, the park is an example of features more typical of areas farther south. The proximity of the water bodies to the park has the effect of moderating the climate, thereby influencing the establishment of interesting flora and fauna. The sandy beaches of Georgian Bay and the rugged shoreline of Parry Sound offer a dramatic contrast in landscape and in activity opportunities.

Situated in an established recreational area which is in close proximity to the urban centres of Southern Ontario, Killbear has become a popular summer camping retreat. To accommodate the visitors, there are a variety of campground facilities, day-use activities and visitor services programs which, together, offer a variety of memorable recreational experiences. In light of the satisfaction so many people derive from this park, Killbear will continue to provide these opportunities while keeping within the limits of the physical environment.

In accordance with The Provincial Parks Act, Sections 1d and 7a, I am pleased to approve the Killbear Provincial Park Master Plan as the official policy for the future development and management of the park. The implementation of the plan acknowledges a renewed interest in the features of Killbear and increased concern for preserving the quality of the park opportunities.

Hon. Frank S. Miller
Minister

September, 1977

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Metric Measures

<u>Unit</u>	<u>Equivalent</u>
centimetre (cm)	0.3937 inches
metre (m)	3.2808 feet
kilometre (km)	0.6214 miles
square kilometre (sq km)	0.3861 square miles; 100 ha
hectare (ha)	2.4710 acres
cubic metre (cu m)	35.3148 cubic feet
litre (l)	0.2200 gallons
kilogram (kg)	2.2046 pounds
kilowatt (kw)	1.3410 horsepower
degree Celsius ($^{\circ}$ c)	$^{\circ}$ C $\times \frac{9}{5} + 32 =$ degrees Fahrenheit ($^{\circ}$ F)

Master Plan Highlights

Killbear Provincial Park is located on a peninsula between Parry Sound and Georgian Bay within a three-hour drive of Toronto.

The park has seven existing campgrounds, with a total of 960 campsites and day-use facilities which offer interesting water-oriented and hiking facilities.

Killbear is a semi-natural environment, with some very interesting biophysical resources, historical features and management programs which are presently threatened by over-use and development.

Killbear is classified as a natural environment park within the Ontario Provincial Park Classification System.

Zoning, development and management guidelines are prepared in conformity with the requirements inherent to the natural environment classification.

The future development of Killbear, as guided by this master plan, calls for a reduction in the number of campsites, to 800-850 sites, a redevelopment of the existing campgrounds, campsite rotation, new opportunities for walk-in camping, the redevelopment of day-use areas and an increased sensitivity to the ecological environment of the park.

Introduction

Historically, Killbear Provincial Park has been one of the most popular parks in the Provincial Parks System. It recorded a campground occupancy rate of 82 percent in July and August of 1975. Killbear is within a three-hour drive of the most populated area in Canada and offers a camping experience more typical of areas farther north. The intensive use of Killbear has placed its resources in danger of deterioration.

Although Killbear Provincial Park has been in operation for over 15 years, it has not had a master plan regulating its future development. The plan is recognized as being imperative in understanding the park's features, assessing its potential and planning for its development and redevelopment. The planning process for Killbear has identified the areas of concern inherent in the development and operation of the existing park and has proposed solutions to these problems in the future development and programming for the park.

In accordance with The Provincial Parks Act, the master plan will be reviewed every five years and will be completed as funds and priorities permit.

Regional Context

Location

Killbear Provincial Park is located on the eastern shoreline of Georgian Bay in the District of Parry Sound (Figure 1). The park occupies 1,123 ha of land and 623 ha of water on a peninsula which forms the northwestern boundary of Parry Sound.

Killbear lies 19 km west of the Georgian Bay Route of the Trans-Canada Highway 69. This is a two-lane, high-speed access route to the major urban centres of Ontario and the northern United States. The park is readily accessible from the south by highways 400, 103 and 69. From the north, the best route is via Highway 17 and Highway 69.

The Ontario Ministry of Transportation and Communications plans to improve Highway 69 and Highway 103 from a two-lane to a four-lane highway corridor. Although the change may improve travel to and from the park, the user's time-distance-desire pattern may not change greatly and Killbear's distinction as a destination point should remain unchanged.

The Town of Parry Sound is the closest major urban centre to the park. It is a distance of 35.4 km by road and 9.6 km by water. The town offers most of the facilities needed by campers, such as major food chains, auto supply stores and laundromats.

Regional Characteristics




The District of Parry Sound is located midway between the urban park facilities of Southern Ontario and the wilderness-oriented parks of Northern Ontario. Over the past 25 years the forest industries of the Parry Sound District have declined in importance. In contrast, there has been a relatively significant growth in the other primary and secondary industries. However, the district's outdoor recreational facilities will most likely continue to be increasingly important in meeting the growing demand for recreational opportunities.

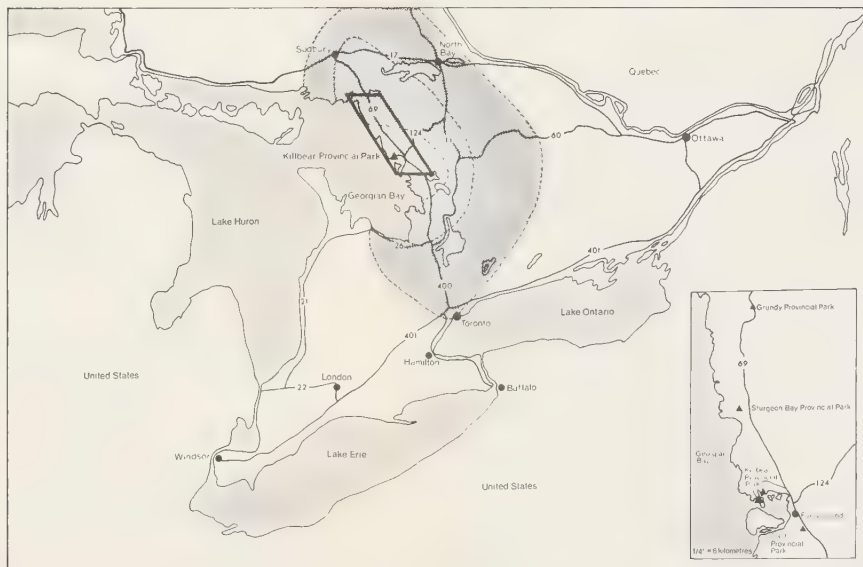
Killbear Point Peninsula is typical of the basic physical characteristics of this part of Georgian Bay. The terrain is generally flat with a few rolling hills and large areas of exposed bedrock. The park's shoreline varies from gently sloping rock to steep, jagged rock or extensive sand beaches. Georgian Bay modifies the park's climate by making it cooler in the summer and warmer in the winter, as compared to areas a few kilometres inland. Although the park's vegetation is common to the area, the mixture and size of the forest are somewhat atypical of the rest of the region. Northern hardwoods, rather than the typical mixed stands, are the most prevalent species in the park.

The Georgian Bay region is a popular location for many cottagers. This is evident along the shoreline adjacent to the park which is dotted with cottages. However, since Georgian Bay is so large and the park is on a peninsula set apart from the rest of the shoreline, no major conflicts have arisen between the users of the area.

Figure 1

Location and Travel Time

-  Up to one hour travel time
-  One to two hours travel time
-  Two to three hours travel time



Existing Park Development

Park Area

The park area is situated in the Township of Carling in the District of Parry Sound. It was purchased in 1956 by the then Department of Lands and Forest. After preliminary development, the park was opened to the public in 1961. Since 1961, the park's campgrounds and facilities have undergone a number of changes and expansions (Figure 2). Most of this development has been executed without any formal plans. As a result, some of the existing development does not conform to the standards of the present park design for natural environment parks. The master plan provides guidelines which endeavour to alleviate the problems.

Road System

Killbear Provincial Park is serviced by 37 km of paved and gravel roads within the boundaries of the park. It is linked to Highway 69 by 19 km of paved township road which transects the northwest boundary and serves as the access road for the first kilometre inside the park. The township road branches off just inside the boundary and provides the access to the public marina on the eastern shore. One kilometre inside the park the road then goes north to service the cottages on Blind Bay. From the township road, 6.5 km of paved road transects the centre of the peninsula to Lighthouse Point. This road provides access to the campgrounds, a day-use area, group camping area and other activity areas (i.e. trails and amphitheatre). The campground roads are all gravel. Some of the interior campground road systems are quite confusing and in some cases dangerous.

Campgrounds

Presently, there are seven auto campgrounds, which are not fully serviced, providing a combined total of 960 campsites:

Kilcoursie	130
Beaver Dams	170
Georgian	70
Harold's Point	130
Granite Saddle	60
Lighthouse Point	220
Blind Bay	<u>180</u>
	960 campsites

There is also a group camping area which is used by organizations such as the Boy Scouts. A few design problems presently exist in the campgrounds. For example, the campsite densities are too high. In some cases, they are as high as 15 sites per hectare when preferably

they should be 7.15 sites per hectare. In addition, there is inadequate buffering in some places.

Day-use Area

The day-use opportunities presently offered are hiking and water-based activities. In 1975, the designated day-use area was moved from the Kilcoursie Campground area to the Twin Points area at the western end of Kilcoursie Bay. The new area is still under development, with a few improvements yet to be made. The parking lot can handle 82 cars.

Interpretive Facilities

There are four guided and self-guided trails, which range in length from 0.8 km to 4 km. A large amphitheatre is located in the centre of the park and is used to stage evening programs. A small building, adjacent to the amphitheatre, is being used temporarily as the interpretive and visitor services centre. It can handle only a few exhibits.

Administrative Complex









Visitor traffic is presently controlled by a interim main gate office and three campground subcontrol offices. Staff at the interim main gate office sell day-use permits to day-visitors and direct campers to one of the three campground subcontrol offices. At the campground subcontrol offices, campsite permits are sold. Kilcoursie Campground, Beaver Dams Campground and Georgian Campground are controlled by one office. The Blind Bay Campground is controlled by a second office and Harold's Point Campground, Granite Saddle Campground and Lighthouse Point Campground are controlled by a third office. The administrative office, just inside the main gate, also functions as a central communications centre.

Maintenance and Staff Area

The maintenance and staff area is located just east of the administrative office. The entire complex consists of a four-bay maintenance building, a two-bay cold storage building, a fuel storage building, staff quarters, the superintendent's house adjacent to the area and a junior ranger camp consisting of a number of cabins. This area is separated from the camping and day-use functions of the park.

Water-based Recreation Facilities

Killbear Provincial Park contains approximately 4,267 linear metres of sand beaches. The majority of the beach is located in Kilcoursie Bay, adjacent to Kilcoursie Campground, Beaver Dams Campground and Georgian Campground. The other campgrounds also have

 Park boundary	 Trail
 Campground	 Boat launch ramp
 Subcontrol office	 Abandoned gravel pit
 Day-use area	 Wood yard



good beaches of ample size, with the exception of Blind Bay, whose shoreline is mainly rock. Boat-launching areas with boat ramps are located in Kilcoursie, Lighthouse, Beaver Dams, Blind Bay and Harold's Point campgrounds.

Water Supply, Sewage and Waste Disposal

Water for the campgrounds is pumped from the bay and is chlorinated. Water outlets are scattered throughout the campgrounds. The park's sanitary facilities consist of four comfort stations, which have no showers and an ample number of vault privies and toilets. However the comfort stations are located in only two campgrounds: two are in the Lighthouse Point Campground and two are in the Blind Bay Campground. The rest of the campgrounds are serviced by only vault privies or toilets.

A sewage lagoon is located along the park's main access road between Harold's Point Campground and Granite Saddle Campground. The park's garbage is now being deposited in a dump just inside the park boundary.

Management Programs

The major resource management activity being conducted in the park is a deer range management program, which provides food for deer wintering in the park. The removal of potentially hazardous, dead or fallen trees and branches from the development areas is the only forest management program conducted in the park. There are no mining operations or traplines located within the park. Fire protection for Killbear Provincial Park is provided by the park's maintenance crew and by the Ontario Ministry of Natural Resources' district headquarters in Parry Sound.

Market Analysis

It is essential to assess the role of Killbear Provincial Park within the Parry Sound tourist area, as well as, the number, characteristics and activities of the park visitors. This assessment will influence what facility improvements are necessary to enhance the visitor's experience.

Parry Sound Tourist Area

Outdoor recreational activities in the Parry Sound area are continually increasing in popularity. It is estimated that 60 to 70 percent of the campers who use this area come from the Toronto region, which has an existing population of 3.6 million people and a projected population of eight million by the year 2,000. Although it is difficult to assess the rate at which the popularity of Killbear will increase, it can be concluded, on the basis of the following information, that this part of the Georgian Bay area will continue to experience a growth in the demand for recreation. The Tourism Outdoor and Recreation Planning Study (1973) discovered the following facts about the area:

- The Georgian Bay area attracts 25 percent of the people taking weekend trips in Ontario.
- The Georgian Bay area is the most popular destination point in Ontario for Ontario residents.
- The Georgian Bay area is the primary point of interest for 16 percent of the population.
- Between 20 and 25 percent of the visitors to the Georgian Bay area seek campground accommodation.

Park Occupancy Rate

The 1975 July and August campground occupancy levels for the four provincial parks in the Ontario Ministry of Natural Resources' Parry Sound District are listed in Table 1. The table indicates that there are intensive pressures on the camping facilities.

Table 1: Campground Occupancy Levels

<u>District Provincial Parks</u>	<u>Percentage of Occupancy</u>
Killbear	82
Grundy	75
Oastler	95
Sturgeon	98

It should be noted that an occupancy level of 60 percent, with full occupancy only on weekends, is considered an ideal operating level. These occupancy levels indicate that the four parks are filled to capacity on weekends and often during the week as well.

The occupancy rate for Killbear Provincial Park for the 1975 July-August period rose to a high of 82 percent. During this 62-day period, the park's campgrounds were more than 75 percent filled on 43 of those days, with 15 of the 43 days having 100 percent occupancy. These facts illustrate the popularity of the park and also indicate that some of the campsites receive very little rest during the course of the prime operating season.

Park Visitors

Park User Characteristics

During July and August of 1975, Killbear Provincial Park attracted 51,800 campers and approximately 4,000 day-users. Killbear is oriented more towards campers than day-users because Oastler Provincial Park and other intervening opportunities are closer to the town of Parry Sound.

Killbear is a destination park partially because it is a distance of 19 km from Highway 69. User survey results for 1975 show that 60 percent of the visiting campers chose Killbear as their destination point. The fact that the average length of stay is 4.5 days, the highest in Ontario's parks system, is additional proof that the visits are predetermined and destination-oriented.

The 1975 camper survey data concluded that 50 percent of the camper groups visiting Killbear were families. One-couple camper groups accounted for 28 percent of the total. During the past two years, especially on the long weekend in May, large numbers of youths visited the park. This visitor group accounted for 90 percent of the campers on this particular weekend. Family campers complained of rowdiness and vandalism by the youths.

A breakdown of the park visitors by age group is given in Table 2. It is interesting to note that almost 90 percent of the park users were under the age of 45. These figures also point out that families are the primary camper group in Killbear.

Table 2: Percentage of Park Visitors By Age Group

<u>Age</u>	<u>Percentage of Total Users</u>
Under 15	26.8
15-24	29.2
25-44	33.6
45-64	9.6
Over 65	0.8

Source: 1975 Camper Survey

The Camper Survey (1975) indicates that approximately 94 percent of the campers originated in Ontario, four percent from the United States and two percent from other provinces in Canada. Earlier user studies (1968) indicate that the average camper drove between 240 km and 390 km to reach Killbear. This trend has not changed since then as is shown in Table 3.

Table 3: Origin of Campers from Ontario

<u>Region</u>	<u>Percentage</u>
Southwest	14.5
Niagara	9.6
Central	63.8
Eastern	2.9
Northern	2.5

Source: 1975 Camper Survey

Park User Activities

The following tables indicate which activities are popular in Killbear and their degree of popularity:

Table 4: Percentage of Participation in the Top Ten Activities

<u>Activity</u>	<u>Percentage of Participation</u>
Swimming	84.8
Relaxing	65.4
Casual play	51.6
Visiting view points	46.4
Trail hiking	39.7
Photography	29.1
Fishing	23.9
Canoeing	22.8
Picnicking	21.3
Self-organized recreation	18.8

Source: 1975 Camper Survey

Fishing does not assume the importance one might expect, even with the presence of Georgian Bay. Although there are large open water areas surrounding the park, it is relatively easy for a fisherman to find other sheltered bays in which to fish.

Table 5: Time Spent Participating in the Top Ten Activities

<u>Activity</u>	<u>Percentage of Time Spent</u>
Swimming	45.9
Relaxing	23.2
Fishing	7.4
Casual play	4.5
Scuba diving	4.3
Hiking	3.5
Canoeing	2.0
Drinking	1.8
Sailing	1.6
Visiting view points	1.4

Source: 1975 Camper Survey

Most campers spend the majority of the day either swimming or relaxing. The rest of the time is spent participating in activities such as fishing, casual play, scuba diving, hiking, canoeing and sailing. Swimming is the most popular activity because of Killbear's superior beach resource (i.e. 4,267 linear metres of sand beaches).

Sailing, which is not represented in Table 4, has grown substantially in popularity in the past three years, as indicated in Table 5. On the weekend, it is not uncommon to see at least 100 sailboats, originating from Killbear, dotting Kilcoursie Bay. Scuba diving is another activity, not indicated in Table 3, which has grown in popularity. Clubs come to Killbear on weekends to practice diving.

In summary, Killbear's location within a three-hour drive from Toronto, its shoreline resource of 4,267 linear metres of sandy beach, the overall increase in leisure time and the continuing demand for recreation from the increasing population of Southern Ontario will all keep Killbear operating at full capacity for many years to come. This could create problems of over-use and deterioration of the park's physical resources, thus affecting the recreational experience of its visitors. For this reason, safeguards should be incorporated into the park's development, redevelopment and management guidelines.

Biophysical Resources

An analysis of the biophysical resources of Killbear helps to identify areas of limitation and significance essential to the planning process.

Climate

Killbear Provincial Park lies within a moist continental climatic region. It has short, warm summers and long, cold winters. Georgian Bay acts as a modifier so that summer temperatures are cooler and winter temperatures are warmer than areas farther inland.

The Parry Sound area receives an average of 145 consecutive frost-free days, with the last frost usually on May 11 and the first frost on October 4. The average mean maximum and minimum temperatures for the summer season (May-August) are given in Table 6:

Table 6: Average Summer Mean Maximum and Minimum Temperatures

	<u>Maximum °C</u>	<u>Minimum °C</u>
May	16.5	5.2
June	22.5	10.8
July	24.8	13.5
August	24.2	12.5

The mean maximum temperatures during the winter months, from December through February, range from -1°C to -6°C , with mean minimum temperatures of -10°C in December and -14°C in January and February.

The Parry Sound area receives an average of 108 days of rain, with 72.34 cm of rainfall. Much of this rain falls an average of ten days every month during the summer. Winter records indicate there is an average of 296.67 cm of snowfall per winter, making this one of the heaviest snowfall areas in Southern Ontario. Total precipitation for the year is about 102 cm.

Throughout the summer months, the main wind directions are from the northwest, south, southwest and west, with average velocities of between 9 km per hour and 18 km per hour, which are favourable to the campgrounds. The winds keep the insects away and bring cooling breezes to the Kilcoursie, Beaver Dams, Georgian, Harold Point, Granite Saddle and Lighthouse Point campgrounds.

Bedrock Geology

Killbear Provincial Park is located in the southern portion of the exposed Grenville Province bedrock, which extends west to east from Georgian Bay to Labrador and north to south in a broad band over

120 km wide. Millions of years ago, the park area was covered by shallow seas during which sediments were deposited. Under the pressures of burial and heat, the sediments were transformed into metasediments. These rocks then underwent folding, faulting and were intruded by granitic rock.

The northeast coast of the Killbear Point Peninsula is underlain by a metasedimentary rock classed as paragneiss, which has been intruded by granitic rock. There is no direct contact between each rock type, but, there is an intervening zone of migmatitic rock. Examples of this can be seen in outcrops found along the Lookout Trail (Figure 3).

Granite pegmatite, which is composed of coarse quartz and feldspar crystals, is found in small segregations as well as whole outcrops. The largest pegmatite formation is found at the Granite Saddle Campground. Pegmatites are of economic interest since they sometimes contain rare minerals. However, the pegmatites of Killbear Provincial Park appear to be simple pegmatites and contain only quartz, feldspar and biotite. Boulders of solid quartz are found lying on top of this formation in the Granite Saddle Campground area. This could be an interesting feature in the park's interpretive program.

A grey granite occupies the southeastern end of the peninsula and intrudes into the pegmatite in places. Amphibolite, formerly a limy shale or sandstone, is a dark mafic paragneiss or metasedimentary rock found scattered throughout the peninsula but specifically at the Granite Saddle Campground or the midwestern part and tip of Lighthouse Point.

On-going geological surveys of the park will provide additional information on the bedrock geology, important to the resource management and visitor services programs.

Surficial Geology

Four proven glacial advances covered the Killbear area. The last glacial advance was part of the Wisconsin age. It scoured and sculptured the bedrock and removed debris deposited from the previous advances, forming many of the area's present surface features. Initially, the glacier deposited a layer of sand-pebble-cobble-boulder till which either thinly covered some of the bedrock or filled in deep depressions in the rock.

Immediately after the final retreat of the ice sheet, between 12,100 and 12,000 B.P. (Before Present), the land that is now Killbear Provincial Park was covered by a huge glacial lake, Lake Algonquin, which remained over the area for some time depositing level-bedded clays until the retreating ice sheet exposed the Mattawa Valley. A resulting major outflow channel created several successively lower lake levels (Penetang, Cedar Point, Syebridge, Orillia, Arotrea, Payette, Korah and others). However, these phases were short-lived, and little evidence of them remains in Killbear.

By 10,600 B.P., the continual drop in the water level of the Lake Huron basin ceased and glacial Lake Hough was formed, with a shoreline somewhat lower than that of present water levels. However, an isostatic uplift of the Mattawa drainage channel caused water levels in the Lake Huron basin to rise again above the present shoreline. This phase was called post-glacial Lake Nipissing. Evidence of this shoreline is found in the form of large sand dunes along the 650-foot contour line in Killbear. Only remnants of the dunes remain, since most of the sand was used during the initial construction of the park.

The water levels of glacial Lake Nipissing dropped as a result of erosion and the creation of exit channels to the St. Clair River and the Chicago River. About 2,500 B.P., the runoff ceased because of a short halt in the erosion. This phase, called the Algoma, was short-lived, but may be represented in the park by dunes and shoreline materials found between the 650-foot contour line and the present shoreline. Finally, through the continuation of the St. Clair River erosion and the abandonment of the Chicago River drainage, the water level retreated to the existing Lake Huron level.

One of the most significant features of the park's surficial geology is the long set of existing beaches. These were formed from the glacial till deposits reworked by wave action. The wave action separated and moved sediments from the headlands to the head of Kilcoursie Bay and other bays. The large till-filled depression on the western side of the park appears to have been a major source of this sediment.

Hydrology

The central part of the Killbear Provincial Park peninsula is composed of shallow drift over bedrock with some clay deposits. The bedrock depression in the central area tends to hold water, thus causing poor drainage and swamp and bog development. Streams in these wet areas offer only overflow or intermittent drainage after rains or during the spring.

Road building has impeded natural drainage in the park. Area A (Figure 4) drains naturally to the east through one large stream just south of Ouimet Point. However, this drainage has been blocked off by the Blind Bay road. This has caused an increase of the swamp in Area A, and drainage now is by small overflow streams which flow to the north.

Another area of poor drainage, located just north of the Harold Point Campground, has been designated as Area B (Figure 4). Behind the Kilcoursie beach and camping area, clays impede drainage by blocking percolation to the underlying sandy sills. This has resulted in a low-lying swamp area.

Figure 3

Bedrock Geology

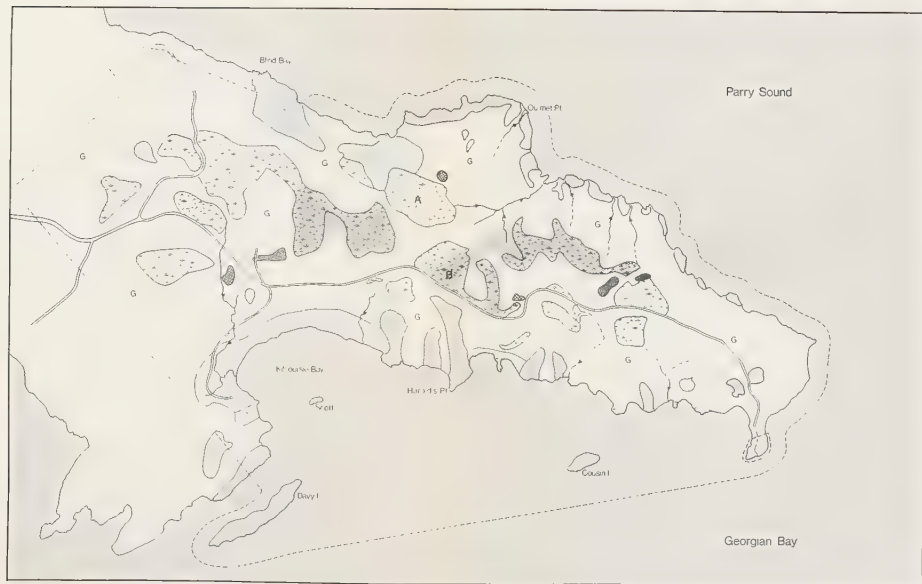
- ☐ Park boundary
☒ Granitic rock
☐ Grey granite (some gneiss)
☐ Pegmatite
☐ Granite gneiss and migmatite
☐ Metasedimentary rock
☐ Transition or unknown



Figure 4

Soils and Drainage

- | | |
|-------------------------|-----------------------|
| Park boundary | Sand |
| Swamp and wetlands | Sand and gravel pit |
| Little soil development | Flow of drainage |
| Good soil development | Intermittent drainage |
| Leached till | |



Soils

The granite bedrock, sand beaches and dunes and unsorted tills form the basis of the Killbear Provincial Park soils (Figure 4). Less than half the park has no real soil development because a good portion of the park is bedrock or very thin soil. Also, there are a number of swamps in the area which have muck soils and a high accumulation of organic matter. The swampy areas usually occupy bedrock depressions, some of which are better drained than others. Most of these areas can tolerate limited light use.

There are a number of well-drained sandy areas within the park which have little or no soil development. In some places, they are overlain by 5 cm to 10 cm of organic material. The sands in the beach areas, particularly Kilcoursie, are flat with little dune or backshore development and can withstand more intensive uses.

A good percentage of the park has a well-developed soil profile and is able to support maple-beech and hemlock forests. The soils of the maple-beech forest, found in the dry areas of the western and central portion of the peninsula (near Ouimet Point), are fairly well drained. They can probably withstand a moderate amount of use.

The soils of the hemlock forests are primarily leached, sandy till, not quite as well drained as the other forest soil. They are found mainly on the southern slopes of the central ridge of the peninsula and often close to swampy areas. This soil is suspected of being able to withstand low to moderate use.

Additional studies and monitoring will be necessary to define the soil types further and fully understand their capabilities to withstand various uses and activities. These studies should be done soon so that their results may be incorporated into subsequent planning and development reports.

Vegetation

The forests of the Parry Sound District fall within the vegetation boundaries of the Great Lakes-St. Lawrence Forest Region. This region is characterized by a mixed forest of coniferous and deciduous species. Three other provincial parks in the district, namely Grundy, Sturgeon, Oastler and the proposed Blackstone Harbour Provincial Park, typify this mixed forest type. However, Killbear's existing forest cover differs from the other park areas and the Parry Sound District in general. The park's main forest cover features the northern hardwoods of sugar maple, beech, yellow birch, ironwood and poplar. The distribution of these species ranges from very mixed stands of hardwoods to pure stands of beech and maple.

The park forest was burned over about 85 years ago and has since become mainly a maple-beech community. Black spruce and cedar occupy the wet boggy areas with oak and ash in the high, dry areas

and rock outcrops. Hemlocks, found on the southern slope of the central ridge of the peninsula, extend down into some of the low-lying, central swampy regions.

The park has been divided into four vegetation communities (Figure 5). These include the maple-beech forest, oak-ash forest, black spruce bog vegetation and hemlock forest. The forest cover and the ground flora for each of the four vegetation complexes are described below:

Maple-Beech Community

This is by far the most dominant vegetative community in the park. The major tree species are sugar maple, beech and yellow birch, while Canada honeysuckle, although not abundant in a mature forest, is the dominant shrub. Trilliums and ferns form the major portion of the ground cover in this community. The lack of species variety indicates that the maple-beech community is well established in the park. The average age of this complex is between 60 and 70 years due to the fires and logging practices which took place during the latter part of the 19th century and the beginning of the 20th century. A detailed estimate of the canopy area for each tree species and an analysis of the shrub and herb composition are available in the background material from the park office.

Oak-Ash Community

The oak-ash community is restricted to bedrock outcrops, ridges and beach areas. It often overlaps with the maple-beech forest as it strives for adequate light, but only in a narrow line. Soil profiles in this vegetation community are practically non-existent. Due to its habitat preferences, this community is patchy throughout the park. It maintains its pure composition and resists the intrusion of other species.






This community can be sub-divided into two communities, depending on whether the habitat has a rock or beach base. The beach sub-community has been reduced in composition as a result of trampling, picking and roadway construction. The trees are white ash, red oak, cherry and big tooth aspen. The common shrubs are sweet gale, meadowsweet and steeple bush.

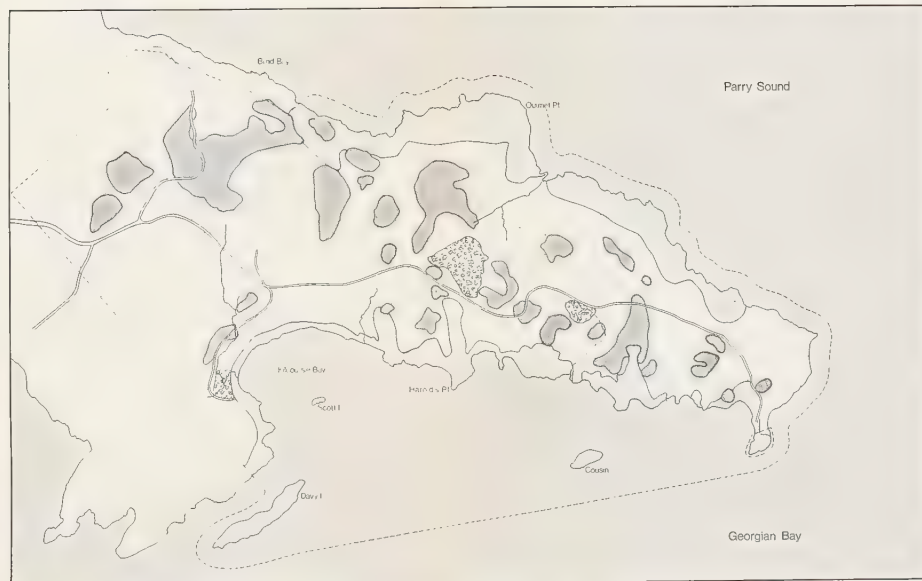
The rock outcrop sub-community has suffered little damage from campsite development. The only major disturbance occurs near Harold Point Campground and Granite Saddle Campground. Overall, outcrops with difficult access have been spared intrusion and disturbance by campers.

Two geographically rare species are dependent on this community. Where this community occurs along rock ridges, the downy rattlesnake plantain has been recorded. The presence of the prairie warbler in this community is of important zoological interest, as this is the most northern area where this bird can be sighted regularly.

Figure 5

Vegetation

- | | |
|---|---|
|  Park boundary |  Hemlock hardwood forest |
|  Maple-beech hardwood forest |  Black spruce bog |
|  Oak-ash hardwood forest | |



Hemlock Community

This community, located on the park's southern slopes and valleys provides sheltered areas for the winter deer population. This forest community protects the area from deep snow accumulations enabling the deer to move about and forage for food more easily.

The portion of this community confined to the valleys is subject to poor drainage as a result of natural flooding (i.e. beaver activities) or artificial changes (i.e. road construction). Normally, hemlocks cannot survive in such a habitat. Hemlocks have a shallow root system which means they are susceptible to changes in the water table. The effects of these changes are evident in the emergence of cedar in what are traditionally hemlock areas.

Black Spruce Bog Community

This community is a mosaic of white cedar swamp, tamarack, spruce forest and a dominant black spruce mire. The shrub layer is very thick in all parts of the bog. Also, the sphagnum carpet is complete and moderately developed. The high sulphide content of the peat would suggest that the bog is very old. Although this black spruce bog is surrounded by disturbance factors (i.e. road, hydro line), it has not been adversely affected because the bog depends on impeded drainage.

There are two other significant bogs in Killbear. The Harold's Point bog is very open and consists of an equal mixture of black spruce, white pine, tamarack and maple. It has a fine floating-mat community, representative of the lake to spruce succession line, which is of high scientific and educational value to the park. The other, small bog near the Kilcoursie Campground is very mature and is at a stage of development where the floating mat may enter. Some of the rarer plant species in Killbear are dependent upon the bog communities. Therefore, it is important to maintain the bogs as natural areas. Detrimental disturbances must be prevented.

Fauna

Mammals

Killbear Provincial Park has a limited number of mammal species because of its size and situation on the peninsula. Mammal species which migrate through the area probably by-pass Killbear, as the peninsula is, in essence, a dead end.

Park developments and human disturbance factors (i.e. campgrounds) are causing changes in the mammal populations and composition. Campers, leaving food scraps behind or actually feeding animals, are augmenting the natural food supplies which result in population increases. Therefore, animals with scavenger habits are increasing in number. On the other hand, changes to the natural environment as a result of park development are driving some animals away in search of more natural habitats with fewer disturbances.

In the early 1960s, the area near Lookout Trail became the first area in Ontario to experiment with manipulating natural winter food supplies for white-tailed deer. There are now 14 ha of treated browse area, each 0.04 ha in size, scattered about the park (Figure 10). These areas are usually located adjacent to hemlock or cedar stands where white-tailed deer, found in Killbear only during the winter months, are known to seek shelter. The browse areas are clear-cut to allow new growth to generate in order to provide winter food for the deer. The present program helps sustain a wintering deer herd of 250 to 300 deer.

The park's mammals have not been directly or intensively studied, so any list would be incomplete. The following is a list of mammals which have been recorded in the park to date:

Northern flying squirrel	Southern flying squirrel
Porcupine	Little brown bat
Red fox	Timber wolf (seasonal)
Raccoon	Ermine
Marten	Fisher
White-tailed deer	Moose
Shrews	Short-tailed shrew
Hairy-tailed mole	Meadow mole
Deer mouse	Meadow jumping mouse
Woodchuck	Beaver
Eastern chipmunk	Grey squirrel
Star-nosed mole	

Birds

Well over 200 species of birds use the park as a breeding place or stop-over during migration. Further studies are needed to determine the habits of the bird population in the park. One species, the prairie warbler, has been sited at the extreme end of the Lookout Trail along the bedrock-exposed areas of Blind Bay. It is believed that this is the most northern area for the regular sighting of the prairie warbler. Some species typical of the four general vegetation areas of the park are given below. A complete species list is available from the visitor centre.

Maple-Beech and Hemlock Communities: Flycatchers, thrushes, robins, thrashers, woodpeckers, wood warblers, grosbeakes, finches, sparrows and nuthatches are present in both the communities. The variety indicates that the species tend to be insect catchers which favour the hardwood forest environment.

Black Spruce Bog Community: Some of the species which favour the swamp and wetland environments are red-winged blackbird, hummingbird, warbler, bluejay, swallow, flycatcher, eastern kingbird, elder and olive-sided flycatcher, northern waterthrush and sparrow. The presence of a solitary vireo and a swainson's thrush, which are approaching their southern limit, indicates the boreal conditions of this community.

Oak-Ash Community and Shoreline Habitats: Offshore birds include a variety of loons, mergansers and terns. The onshore diversity is much greater because of the variety of possible habitats, more particularly the wood, rock or sand microclimates. Some species of the shoreline habitats include different varieties of gulls, swallows, waxwings and sandpipers.

Amphibians and Reptiles

At least four of Killbear's herptiles, particularly the spotted turtle, massassauga rattlesnake, fox snake and hog-nosed snake, are rapidly declining in population in Ontario and are considered to be endangered species. The map turtle and blanding's turtle found in this park are considered to be rare species. Superstitions and human misunderstanding leading to senseless killing and the destruction of necessary habitats are the greatest causes for the decline of these animals in Ontario.

The sedge meadow adjacent to Kilcoursie Campground and the black spruce swamp adjacent to the Lookout Trail area provide good habitats for one or all of these mammals. Therefore, it is important to maintain these portions of the Killbear Provincial Park environment to ensure the preservation of these amphibians and reptiles. It will be necessary to implement an informative interpretive program to educate visitors about the misconceptions surrounding these animals and encourage their co-operation in the preservation of the animals' habitats.

The following is a partial list of the reptiles and amphibians in the park:

Green frog	Spring peeper
Leopard frog	Grey tree frog
Bull frog	Red-backed salamander
Smooth green snake	Spotted salamander
Fox snake	Blue-spotted salamander
Red-bellied snake	Painted turtle
Dekay's snake	Snapping turtle
Eastern garter snake	Spotted turtle
Hog-nosed snake	Map turtle
Massassauga rattlesnake	Blanding's turtle

Fish

Killbear Provincial Park provides few inland fishing opportunities because there are no internal lakes or streams. However, the park's location on Georgian Bay allows for adequate access to the Georgian Bay fishery where there are many protected bays providing excellent recreational fishing opportunities. Some of the indigenous species are lake trout, pickerel, perch, muskellunge and pike.

Cultural Resources

Settlements

To date, no artifacts relating to the early aboriginal occupation of the Georgian Bay shoreline have been found primarily because there has been no complete archaeological survey. However, it is unlikely that any sites still intact would be found because of the degree of human disturbance along the beaches.

The surrounding area was probably originally inhabited by Shield Archaic hunters and gatherers about 5,000 years ago. Later it was a hunting ground for the Nipissing Indians until the 1640s when the Iroquois took control of the area. The Iroquois Indians controlled the area until the 1750s when they were driven south by the Ojibwa. Presently, there are two reservations in nearby Parry Sound and Shawanaga, both inhabited by Ojibwa Indians.

Townships were being surveyed as settlers moved northward into the Shield area during the 1850s and 1860s. Carling Township, in which Killbear is situated, was surveyed in 1872. By 1878, two colonization roads had reached the township, but it was not until 1885 that the first settlers reached the Killbear Point Peninsula. On September 5, 1885, Mathew John Scott and his brother William settled on three lots, which now comprise the new day-use area. There is very little information on the success of their agricultural venture, but they did obtain title to their land. However, by the turn of the century, both landowners were in arrears in taxes, and by 1904 both properties had been sold to Charles Phillips. Phillips also purchased a 728-ha tract from William Beatty, giving him a total of 930 ha on Killbear Point.

Phillips was a local entrepreneur, who, in 1910, had expectations of turning the 930 ha into a resort enterprise under the name of Georgian Bay Park and Hotel Company Limited. The plans were for a large hotel with tennis courts, bowling greens and 800 cottage lots along the shoreline. However, the scheme failed because of insufficient financial backing, and in 1921 Phillips sold the property to American interests.

The property remained under foreign ownership until the early 1950s when the Van Wagner brothers of Toronto purchased it. Virtually no development occurred during this 35-year period. In 1956, the then Department of Lands and Forests purchased the property to create the provincial park.

Humanized Landscape

The greatest human impact on the original landscape of the park was the logging industry which altered some of the original tree

cover of the park. Originally, there were numerous areas scattered with white pine, but after intensive logging, these areas were transformed into deciduous hardwood areas.

The first logging operations in Killbear were believed to have been carried out between 1898 and 1900 by a jobber for the Parry Sound Lumber Company. By 1902, the remaining pine had been cleared from the park by another jobber.

Hemlock was next to be harvested. Its bark was a source of tannin used in the tanning process of leather industries. This bark was shipped to Penetang and Berlin (now Kitchener) by the Breithaupt Leather Company between 1906 and 1931. After 1913, Standard Chemical Company moved into the park and acquired the rights to cut all hardwoods. The company built two camps in the park: one on Blind Bay near the Lookout Trail and the other at the mouth of the creek on the west side where the Beaver Dams boat launch is today. This hardwood was shipped to the company plant in Parry Sound and converted into charcoal, wood alcohol and acetate. By 1916, the Standard Chemical Company had folded. Afterwards, a small-time jobber by the name of Thompson intermittently cut tamarack, hemlock, balsam and spruce and also ran a maple sugar operation until the 1930s. Logging operations in the park ceased in 1945.

Historical Sites

The following is a list of historical sites within the park. The numbers correspond to the locations shown in Figure 6:

1. An Indian grave site was located on Cousin Island 60 years ago. Little remains of the graves because of disturbance.
2. A camp located near the group camping area consists of the remains of five buildings: a stable, a cookery, two bunkhouses and an office. Little is known about the site or its age.
3. The Thompson campsite, consisting of a sugaring camp on one side of the swamp and the headquarters for both the sugar and lumber operations on the other side of the swamp. The log cabin in the sugaring camp is still standing. A nearby cabin constructed of lumber has since collapsed. Other buildings have rotted away leaving only mounds of rubble.
4. An area originally cleared by the Scott Brothers which Standard Chemical Company took over to clear, dry and load hardwood for cordwood. It was later used for pasturing by Tom Fisher.
5. Fisher's slaughtering scaffold of which there still exists only the scaffold marking the place where Fisher butchered and hung cattle.
6. Scott's homestead site consisting of a cabin, stable, blacksmith shop and workshop, little of which remains other than mounds at the cabin site.

7. Toneffet cabin, in Blind Bay, of which there presently remains only a log cabin, probably inhabited from 1908-1915.

8. The Standard Chemical Company's cutting camp, used in 1914-1915. It consisted of two cabins of which only the remains of rotted bottom log beams and joists presently exist.

9. The Roadman cabin which was occupied in 1898-1900 by a jobber and his wife. Only mounds around the cabin presently remain.

10. Recordings were made in 1913 of rotting foundations which were probably part of a fisherman's cabin possibly dating back to the 1870s and 1880s. However, no evidence remains to date.

11. The Dolphus Gagnon cabin was well built, but was severely vandalized and removed in 1970.

12. Site of the Gagnon cabin of which no visible signs remain.

13. Standard Chemical Company's teaming camp, consisting of two stables, blacksmith shop, bunkhouse, camp office and cookery. Most of the site was destroyed during the present campground's construction.

14. The lighthouse at Lighthouse Point, important to the safe navigation of the bay, is another historical site which has remained intact. However, it is outside the park boundaries and is the property of the federal government. Every effort will be made to work with the federal government to ensure the proper preservation of this feature.

The Thompson camps and the camp located near the group camping area represent the forestry and maple syrup activities formerly carried on in the park. The remains of the Scott cabin are symbolic of the former agricultural operations. The Indian burial ground on Cousin Island is the only representative of native presence in the park. These areas in particular and the other few identifiable sites remaining should be protected from future disturbance and development.




Historical Themes

An analysis of the previous information reveals that there are two features from which historical themes for interpretive programs could be developed. The two historical themes for Killbear Provincial Park will be:

- lumbering in the Georgian Bay area from the time of the first settlement to the 1930s.
- agriculture and homesteading on the south Shield.

Figure 6

Cultural Resources

-  Park boundary
-  Existing historical sites
-  Former historical sites



Significant Features

A number of features which are indigenous to Killbear Provincial Park have been identified in the previous information as being significant or outstanding and warranting protection (Figure 7). Suitable management policies and interpretive programs, as applicable, will be defined to safeguard the qualities of the significant features. Among the features considered to be important are the following:

-Georgian Bay is an important feature in this location because it is deepest off Killbear Point. In addition, its presence modifies the climate which influences the composition of the plant and animal communities such that they are more typical of a Southern Ontario environment.

-The area between Harold's Point and Granite Saddle is significant in terms of the interesting complex of outcrop and valley landscape and associated vegetative and animal species.

-Sand dunes were originally significant features, remnants of the various glacial lake levels. Historically, the dunes were used as navigational markers. Unfortunately, they were excavated for their sand and gravel resources in the early days of the park's development. The dunes are identified here for the purpose of preserving what remains for historical, interpretive and scientific programs.

-There are a number of sand beaches on the Killbear Point Peninsula only one of which (the one west of Lighthouse Point) is in its original condition. The beaches should be maintained and managed in order to preserve the resource and avoid further deterioration of the facility.

-The sedge meadow adjacent to Kilcoursie Campground is considered to be a significant feature. It is the habitat of a variety of rare or endangered species of snakes and turtles, such as the fox snake, massasauga rattlesnake, spotted turtle, map turtle and blanding's turtle.

-In addition to being an interesting vegetation complex, the black spruce bog is an important feature because it is the home for some rare and endangered animal species.

-A floating sphagnum bog was discovered in the Harold Point Campground area. It is of local significance only, but should be protected nonetheless.










-The Lookout Trail is one of the very few places in North America where all four species of goodyera orchids grow together. This feature, in addition to the other interesting flora species found here, makes this area significant.

-A small area within the abandoned gravel pit behind the maintenance yard was discovered to have a hybrid spiranthes orchid. This makes the area highly significant because it is the only known location in North America where this particular orchid grows.

-Of the historical sites identified in Figure 6, the sites from 1-9 still exist and would be valuable features to incorporate into a visitors services program.

Figure 7

Significant Features

-  Park boundary
 Sand beaches
 Former sand dunes
 Rock
 Swamp
 Treed rock and swamp
 Rock outcrop and valley complex
 Vegetation
 Historical sites



Park Policy

Classification

Killbear Provincial Park contains many of the physical features characteristic of the Georgian Bay shoreline. Its varied shoreline has smooth, gently sloping rock, steep jagged rock and large expanses of sand beaches. The beach resource in Killbear is probably one of the finest along the eastern coastline. Killbear, with its wind-swept pines and moss and lichens on exposed rock, supports typical examples of shoreline vegetation. The park's dominant forest cover represents the northern hardwoods. No other existing or proposed provincial park in this part of Ontario contains such examples.

These factors, combined with Killbear's location make Killbear a suitable natural environment park. Therefore, Killbear Provincial Park will remain classified as a natural environment park according to A Provincial Parks Policy for Ontario, 1976 (Draft).

Goal

The goal of Killbear Provincial Park is to provide the park users with the opportunity for enjoyable recreational experiences in the context of the Georgian Bay environment and consistent with the natural environment park classification.

Objectives

The following objectives indentify the means by which the park's goal can be achieved and the user's preferences can be met.

- To increase the orientation of park facilities towards destination family campers.
- To maintain user controls to discourage vandalism, rowdyism and activities conflicting with the park's goal.
- To redevelop existing campgrounds to provide optimum campsite densities, road alignments and services to improve the camper's experience.
- To develop new types of camping experiences.
- To provide a mechanism for campsite rehabilitation.
- To preserve the existing vegetative cover as much as possible during any redevelopment.

- To preserve large tracts of land and water in their natural state.
- To protect areas which are biophysically and historically significant.
- To create a program by which park visitors will be better informed of the park's natural and cultural features.

Zoning

There are six possible land-use zones allowed in a natural environment park: access, development, nature reserve, natural environment, historical and wilderness. Each of the zones incorporates certain land-use and management policies regulating development practices. Through zoning policies, areas of biophysical and cultural significance can be protected from mis-use.

Killbear has been divided into the following five zoning categories: access zone, development zone, nature reserve zone, natural environment zone and historical zone (Figure 8).

Access Zone

The access zone is a 60-m wide corridor along the road which provides access to the park and to the different zones. The roadway has been zoned to ensure the proper access and maintenance of the area throughout the park. The township road has been included in the zoning because it provides access to the Thompson Trail and the northeastern section of the park.

Development Zone

The existing park development contains approximately 37 km of road, seven campgrounds, 960 campsites, a group camping area, an administrative and service area and a new day-use area as an expansion to the existing area located at Twin Points. In addition, there is a substantial amount of development in the beach area. The following is a brief description of the various areas zoned for development:

D1 - The Twin Points day-use area containing a beach, an 80-car parking lot, a picnic area and vault privies.

D2 - The Kilcoursie, Beaver Dams and Georgian campground complex plus the Harold's Point Campground. The area also contains the best beach in the park.

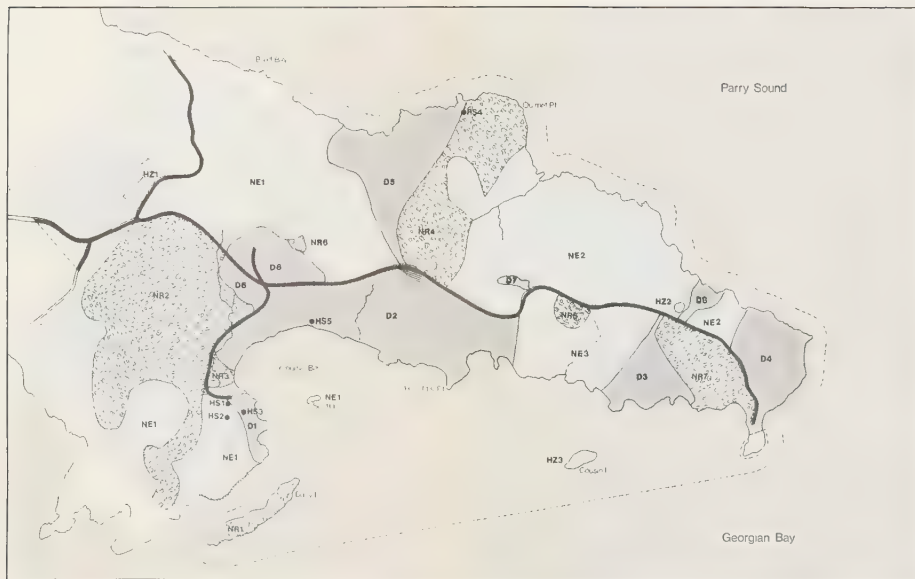
D3 - The Granite Saddle Campground plus an area for expansion when the campground is redeveloped.

D4 - The Lighthouse Point Campground plus additional area for redevelopment purposes.

Figure 8

Zoning

- | | |
|--|--|
|  Existing park boundary |  Natural environment zone |
|  Proposed addition |  Nature reserve zone |
|  Access zone |  Historical zone |
|  Development zone |  Historical sites |



D5 - The Blind Bay Campground.

D6 - The administrative and service area.

D7 - The sewage lagoon.

D8 - The group campground.

Nature Reserve Zone

There are six areas in the park designated as a nature reserve zone. The areas are representative of the park, the region and the province. They have been zoned to protect the flora and fauna and to allow for the continuation of natural succession. Facilities will be limited to simple trails and displays. The rationale for each designation is as follows:

NR1 - Davy Island, consisting of about 3.2 ha, remains undeveloped and shows little evidence of use. It has excellent examples of Georgian Bay's rock formation and shoreline and excellent pine stands. The island is fairly typical of Georgian Bay and is useful for interpretive purposes.

NR2 - A large area forming the west side of the park contains the Twin Points Trail. The entire area of approximately 130 ha is covered in northern hardwood forest containing a large number of yellow birch. An understory of balsam is forming throughout much of this hardwood stand. The area is preserved specifically to monitor the change in its vegetation.

NR3 - Kilcoursie swamp is a 6-ha sedge meadow surrounded by a black ash swamp. This is a unique feature of the park. The swamp contains many species, uncommon to the area, such as blanding's turtle and map turtle. The area also contains two species which appear on the declining species list, the spotted turtle and the massassauga rattlesnake. The area has the potential to provide an "extensive discovery type" experience facilitated by a boardwalk system around the outside of the swamp.

NR4 - This nature reserve zone contains the Lookout Trail, the most significant trail in the park. This zone is also one of very few places in North America where all four species of goodyera orchids grow together. This would be an excellent place to monitor for introgressive hybridization.

The zone is comprised of three natural features, the black spruce-tamarack swamp, the hemlock swamp and a portion of the rugged rocky Georgian Bay shoreline. The black spruce-tamarack swamp provides a good habitat for the massassauga rattlesnake. It also provides breeding areas for both the swainson's thrush and solitary vireo, which are at their southern limit. The

hemlock swamp is quite interesting and fairly uncommon as it is more common to find upland hemlock stands in this area. Finally, the rugged and rocky portion of Georgian Bay shoreline at the northern end of this zone contains ferns and spike moss. Their habitat requirements cannot be met in many other places at Killbear. In addition, the park interpretive staff claims that this habitat has been a breeding area for the prairie warbler, a bird which might not otherwise normally come this far north to breed.

NR5 - Harold's Point bog is a highly sensitive and interesting area which contains a floating sphagnum mat upon which are found a variety of bog plants, the highlight of which is the rare calopogon orchid. The area should not be used for an on-site interpretation program because of its high sensitivity to disturbance, but an off-site interpretive program may be feasible.

NR6 - In the northeastern corner of the maintenance gravel pit, there is a highly significant feature which warrants protection. The area is the only known locality for a hybrid orchid of the *spiranthes lacera* and *spiranthes romanzoffiana* orchids. Both of these orchid types are growing on either side of the hybrid orchid, which is believed to be a new flower in Ontario. It is felt that this flower will add scientific value to existing research into the study of chromosomes now being conducted at the University of Toronto. On this basis, the area should be set aside for research purposes.

NR7 - This area contains a stretch of undeveloped original beach at the foot of the Lighthouse Point Campground road. The area also has an excellent topography of rock outcrops and large quartz boulders. The beach area is on the verge of being denuded because of uncontrolled use. Management controls are needed to conserve the area's significant features.

Natural Environment Zone

There are three areas under the designation of natural environment zone. This zone designation provides for extensive types of recreation which require only the simplest man-made facilities. Compatible resource management activities (i.e. deer yard management) may take place within this zone.

NE1 - This area incorporates approximately 345 ha of the park.

NE2 - This area incorporates approximately 170 ha of the park and contains the major deer yards.

NE3 - This area is between Harold's Point and Granite Saddle and contains about 60 ha of the park.

Historical Zone

Most of the historical elements of the park have disappeared as a result of natural decay and park development. Three areas incorporating significant historical areas and features have been zoned for protection. In addition, a few sites with remnants of historical features have been designated historical sites (HS). Both the historical zone and historical site classifications are designated to recognize and preserve the remaining historical features, but, because their significance varies, the management practices and interpretive programming for the two designations will differ.

HZ1 - The Thompson cabins located in this area were built and used between 1915 and 1945 in the logging and maple syrup operation. A cabin is still standing with some of the equipment used in the operations scattered throughout the bush. This area is currently being used in the interpretive program.

HZ2 - This area, located near the group camping area, includes the remains of a logging camp.

HZ3 - Cousin Island was used at one time as an Indian burial site. This is the only known example of native history within the park's boundaries and has been designated for protection.

HS1 - An historical pasture area used by the Scott Brothers, Standard Chemical Company and Tom Fisher.

HS2 - The site of Scott's homestead consisting of remnants of a cabin, a stable, a blacksmith shop and a workshop.

HS3 - The remains of the Toneffet log cabin which was used around 1910.

HS4 - The site of Standard Chemical Company's cutting camp, used around 1914-1915. The remains of this camp are barely visible.

HS5 - The remains of the Roadman cabin which was occupied in 1889-1900.

Development Strategy

The master plan illustrates the proposed campsite and campground development and redevelopment, access, facilities (water supply, toilet facilities, parking, etc.), trail program and day-use development in Killbear Provincial Park (Figure 9). A detailed site plan will be completed and approved prior to the commencement of any development.

Camping

Killbear has 960 campsites. After the redevelopment of existing campgrounds and the completion of the proposed new campground development, Killbear will have between 800 and 850 campsites.

Redevelopment of Existing Campgrounds

Certain areas within the seven existing campgrounds and some individual campsites are poorly designed and exhibit characteristics incompatible with a high quality camping experience. For example, presently there is a high density of 15 campsites per hectare with very little natural buffering, 12 m or less, between campsites. In a natural environment park, it is desirable to have campsite densities of no more than 7.5 sites per hectare, with a natural buffer of 45 m between sites. However, because of the park's popularity and the beach areas' high carrying capacity, the campsite density will be between 8.7 and 10.0 sites per hectare, with buffer areas of 23 m to 30 m between sites. Each campground will be studied closely to define the individual problems prior to producing a site-specific redevelopment or development plan.












Below is a list of existing campgrounds with their corresponding maximum number of campsites after redevelopment:

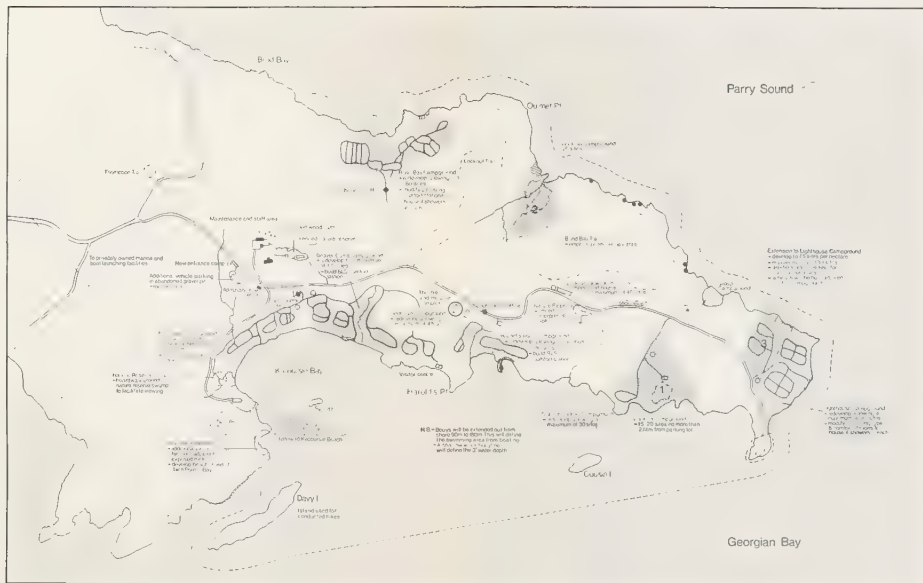
Kilcoursie	112
Beaver Dams	110
Georgian	45
Harold's Point	80
Granite Saddle	25
Lighthouse Point	180
Blind Bay	<u>180</u>
	732

The Kilcoursie Campground has already undergone a redevelopment plan exercise. The plan has adopted the preferred campsite density of 8.7 to 10.0 sites per hectare and has also minimized the cutting

Figure 9

Master Plan

- | | |
|---|--|
|  Existing park boundary |  Existing trails |
|  Proposed addition |  Proposed trails |
|  Existing campground |  Picnic sites |
|  Campground expansion |  Garbage building |
|  Boat launch and beaching area |  Parking lot |
|  Buoyed swimming area | |



of existing vegetation in light of the slow growing characteristics of Killbear's vegetation. A similar planning experience will be adopted in all other campground redevelopment schemes.

The following is an outline of design criteria which will be followed for existing campground redevelopment:

1. Campsite densities will not exceed 10.0 sites per hectare.
2. There will be a buffer area of 23 m to 30 m of dense vegetation between campsites, preferably a mixture of brush and trees.
3. There will be a 23-m buffer of vegetation between a campsite and a vault privy, comfort station, parking lot, maintenance area, etc.
4. No campsites should be located directly across from a vault privy, comfort station, parking lot, maintenance area, etc.
5. Shoreline campsites must be 45 m from the shoreline.
6. Wherever the terrain makes it practical, campsites located along roads will be staggered so that no sites are situated directly across from one another.
7. Campsites at the corner or junction of two or more roads will be removed.
8. Existing sites, with little or no buffering, will be eliminated.
9. Sites currently adjacent to or across from a vault privy, comfort station, parking lot, maintenance area, etc. will be eliminated.

New Campground Development

To compensate for the removal of some of the campsites during redevelopment, three new camping areas are proposed (Figure 9). These areas will supply approximately 100 auto campsites and 35 to 40 walk-in campsites. Development Area 1 and Development Area 2 (Figure 9) are designated as walk-in campgrounds having 15 to 20 and 20 campsites, respectively. The areas differ in the type of facilities they will offer. Area 2 is more primitive than Area 1. The walking distance from the parking lot to the campsites in Area 1 is a maximum of 274 m. In area 2, the campsites are one kilometre from the parking lot. With the help of brochures and information programming, it is hoped that campers will use these campgrounds as stepping stones to long distance hiking and camping trails found elsewhere (i.e. the Western Uplands Trail in Algonquin Provincial Park).

The following are design criteria for developing campsites in Area 1:

1. The sites will be semi-primitive.

2. Campsite density will not exceed 3.75 sites per hectare.
3. One set of vault privies, with basins, will be located close to the parking lot to allow easy servicing.
4. All campsites will be located at least 45 m from the existing shoreline.
5. Each campsite will be equipped with a fire grill and a picnic table.
6. Paths to the natural beaches will be provided.
7. Some clearing of vegetation along beaches is necessary, but this will be kept at a minimum.
8. Walk-in campers will register at the Harold's Point Campground subcontrol office.
9. A parking lot will be constructed to accommodate 15-20 cars or one car for each campsite.
10. The water system for this area will come from Granite Saddle Campground and will be available from three strategically placed water cairns.
11. Campers will be issued one plastic garbage bag for each day of camping. They will carry their own garbage out and deposit it in the small garbage building to be located on the entrance road to the Granite Saddle Campground.

The following are some design criteria for development in Area 2.

1. Campsites in Area 2 will be more primitive than those located in Area 1.
2. Interior pit privies, similar in design to those used in the interior of Algonquin Provincial Park, will be the only sanitary facilities provided.
3. Water will be obtained by the camper from the bay. Tests on the quality of the water in the bay will be conducted at regular intervals during the course of the operating season.
4. A 40-car parking lot will serve the walk-in campers and the people using the proposed Blind Bay Trail.
5. A small garbage building and firewood area will be located at the parking lot. Campers will be issued garbage bags (one for each camping day) and will be responsible for carrying their garbage out of the camping area. Campers wanting firewood will have to carry it in from the parking lot.

6. Paths to the natural beach area will be provided.
7. No brushing of the beach area will be permitted in order to conserve the primitive camping experience.
8. Walk-in campers will register at the Harold's Point Campground subcontrol office.

Development Area 3 will contain approximately 100 drive-in campsites linked with the Lighthouse Point Campground road system. The exact number will be subject to change depending upon physical constraints identified during site planning. Forty to 50 of these sites will be set aside and used only if campsites in another campground need to be taken out of service for rehabilitation. This campsite rotation system will alleviate campsite overuse and deterioration. The campsite development will be limited to 7.5 sites per hectare.

The following are design criteria for the development of Area 3:

1. The campsite density will be a maximum of 7.5 sites per hectare, with at least 45 m of buffering between sites.
2. One model 9LS comfort station will be constructed and situated in a central location.
3. Four sets of vault privies with vanities will be strategically located throughout the campground.
4. The actual campsite dimension should be a nine-metre radius.
5. All campsites will be set back 45 m from the existing shoreline.
6. Walking paths will be constructed to the beach areas.
7. The water system servicing this area will come from the Lighthouse Point Campground. The pumping capacity of the existing water system will have to be increased.
8. A water cairn will be constructed for every 15 sites.
9. A beach area will be constructed in an appropriate area along the northeastern shore of Lighthouse Point. This will syphon off some of the additional pressure from the existing Lighthouse Point beach.

Road System

Road Alignments

Some of the campground road systems are hazardous to drivers and pedestrians. The Blind Bay Campground road system is a prime example of this problem. It has improper curve radii, blind corners, blind hill crests and steep hills. The Blind Bay Campground and Lighthouse Point Campground need extensive road pattern changes, while Beaver

Dams Campground and Harold's Point Campground require only light modifications. Kilcoursie Campground's road system is already undergoing re-alignment changes.

The following is an outline of design criteria necessary for proper road construction and re-alignment:

1. Due to the slow vegetation growth in Killbear, great care must be taken to cut as little existing vegetation as possible during any road re-alignments.
2. One-way loop systems will be incorporated wherever possible without seriously affecting the existing vegetation.
3. Maximum use of existing road systems should be maintained.
4. All road systems must follow proper and approved park specifications for road widths, curvatures, etc.

Main Entrance Complex

In the past, the main park office and a small booth located in the middle of the main access road across from the office formed the main gate. The park office area was congested with visitors asking for information, refunds, day-use permits and directions to the campgrounds. In 1976, as an interim measure, the small booth was moved up the road closer to the park boundary, approximately 320 m from the park office. This gave the park staff more control over the incoming traffic and reduced the congestion problem around the park office. This trial system was a success and will be implemented on a permanent basis. A permanent main entrance complex will be constructed. This will consist of a permanent entrance office and proper turning circles to facilitate the visitors' departure from the park when it is full.

The following are criteria for the redesign of the main entrance complex:

1. The complex will be built where the interim entrance booth presently exists.
2. This site will need a permanent electric power source and a communications system linking the gate with the main park office and the three park sub-offices.
3. The turning circles will be of ample radius to allow for the turning of cars with trailers.
4. The entrance office need not be as large as a Type 3 office.
5. The office will contain a washroom for the convenience of the gate staff.

Recreation Facilities

Play Areas

Approximately 27 percent of the park users are under 12 years of age. With the average length of stay being quite long (4.5 days), and the short attention span of this age group, it might be advantageous to construct facilities, such as creative playgrounds, to provide a greater variety of opportunities for the young. From a recent camper survey (1975), 48 percent of the campers felt there was a need for such a facility. However, before becoming committed to this course of action, a survey should be taken to determine how the under 12 and 12-20 year-old age groups are now spending their time in the park. The results of such a study would determine the need for special play facilities, such as creative playgrounds, and the preferred location of such facilities in the park.

The following are suggested design criteria should the development of special play areas be desirable:

1. Natural materials, such as wood, logs, hemp rope, etc., should be used in constructing the special play areas.
2. The playground should blend into its surroundings.
3. Cleared areas, such as road closures, if centrally located, should be utilized.
4. These playgrounds should include such facilities as linked climbing devices, balance beams, obstacles, ropes and unconventional swings which will help develop the communicative, emotional and physical attributes of the child.
5. Each of the playgrounds should represent a different theme of the park (e.g. shipping on Georgian Bay, logging, etc.) and should be constructed around that particular theme.

Open Space Areas

Campground redevelopment will create some open spaces, especially in areas of road closures. Some of these areas could be maintained to facilitate such activities as ball throwing and frisbee so that the open areas, rather than the campground roads, are used. These areas should be scattered throughout the campgrounds in the park.

Day-use Areas

The day-use area located at Twin Points opened in 1975. Since its opening, there have been complaints about the lack of early to mid-afternoon sun in the beach area. To compensate for this problem, the day-use area will be expanded to incorporate Twin Points Bay. This area, with a sun exposure similar to the Kilcoursie Bay beach

area, includes a small sandy beach for swimming and large expanses of smooth bare rock suitable for sunbathing. A walkway will be established to link the day-use area and Kilcoursie Bay beach area to allow both day-users and campers to move freely between the two areas.

The following are design criteria to be incorporated into the day-use area development:

1. The vegetative growth along Twin Points Bay beach area will be brushed back to create a good dry beach.
2. Picnic sites will be established along the fringe of trees, the bare rock area and behind the beach area. The picnic sites should be placed at intervals of 15 m to 23 m with limited tree cutting.
3. An information sheet will be issued with each day-use permit describing the amenities of the day-use area.
4. Cutting of trees for the purpose of allowing longer sun exposure on the beach will not be permitted.
5. No special facilities (i.e. toilets, picnic sites) will be established along the campground's beaches for day-users.
6. The path between the Kilcoursie Campground area and the day-use area will be routed along the lakeshore perimeter of the nature reserve swamp area. Boardwalks will be constructed where appropriate.
7. An approved plan exists for the day-use area which includes parking facilities for a maximum of 80 cars. Initially, the first phase called for the construction of half of this facility, but as a result of its recent popularity, it would be more appropriate to develop the whole facility at one time.

Boating Facilities

Killbear's location on Georgian Bay makes boating a popular activity at this park. A small survey conducted in 1975 concluded that there have been as many as 300 boats located within the park boundary usually in the ratio of 40 motor boats to 60 non-motor boats.

Boating activities conflict with other water-based activities. At present, boats are pulled up onto beaches, such as at Kilcoursie, and interfere with beach users and swimmers. Power boats, cruising or pulling water skiers, sometimes harrass swimmers and sail boaters. Thus, motor boating activities in Killbear require regulations and controls.

There was some concern expressed that motor boating on Kilcoursie Bay might be creating an oil buildup, causing both environmental and aesthetic problems. However, on-site observations and an information document published by the Ontario Ministry of the Environment dealing specifically with the impact of motor boats on a water body, indicate that there does not seem to be an oil buildup problem. However, motor boat use will be monitored, specifically to safeguard against future environmental and aesthetical problems.

The following design criteria will regulate the boating facilities:

1. The existing boat launching ramps in the park will remain in their present locations, with the exception of Kilcoursie's boat ramp, which will be moved to an area prescribed in an approved redevelopment plan.
2. The Lighthouse Point boat launching ramp location will be changed. Presently, it is inconvenient and requires a lot of maneuvering to launch a boat properly. Therefore, it will be moved to the opposite end of the parking lot.
3. All swimming and beach areas will be marked off by buoys 90 m to 180 m from shore to segregate boaters and water skiers from swimming areas.
4. Only the areas noted in Figure 9 will be available for boat beaching.
5. The additional vehicle parking lot, located adjacent to the main gate, will provide those visitors with boat trailers with a place to store their trailers, other than on the campsite.

Service Facilities

Existing Water and Sanitary Facilities

All existing water supply systems, vault privies and comfort stations should remain for the present. However, with campground redevelopment, new comfort stations will be built, thus phasing out the need for some of the existing vault privies. Existing water systems may become overtaxed by the new sanitary facilities and will therefore warrant expansion or replacement.

Additional Water and Sanitary Facilities

At present, there are only four comfort stations located in the park, two at Lighthouse Point Campground and two in Blind Bay Campground, none of which have showers. Park users now use the beach area for bathing purposes. The 1975 Camper Survey and other verbal and written comments cited the lack of comfort stations and the absence of shower facilities as the most common complaints. The campers' average length of stay of 4.5 days alone justifies the establishment of shower facilities.

The situation will be corrected by modifying the four existing comfort stations to accommodate showers and by constructing comfort stations with showers in the other campgrounds. These comfort stations will also have laundry facilities. Only laundry tubs will be provided.

Granite Saddle Campground, because of its small size, will be the only campground without a comfort station. However, the campers in this area will be able to use the comfort stations in the other campgrounds.

The following are the comfort station specifications:

1. In Lighthouse Point Campground the two existing Type 8 comfort stations will be modified by adding four showers and a laundry room facility to each building.
2. For the extension to the Lighthouse Point Campground, a Type 9LS comfort station, housing two showers, will be constructed.
3. In Blind Bay Campground, the two existing Type 8 comfort stations will be modified by adding four showers and a laundry room facility to each building.
4. In Kilcoursie Campground, a Type 8LS comfort station with six showers will be constructed.
5. In Beaver Dams Campground, a Type 8LS comfort station housing six showers will be constructed.
6. In Harold's Point Campground, a Type 9LS comfort station housing two showers will be constructed.

Additional Vehicle Parking

In the past, traffic congestion and the presence of more than one vehicle on a campsite have created problems. On some weekends, there have been as many as 500 additional vehicles or visitors and campers in the park thus impeding traffic on internal roads and causing campsite deterioration.

Various proposals have been offered as partial solutions to the problem. However, locating more parking lots within the campgrounds or adjacent to the sub-offices does not alleviate the increased internal traffic congestion. In addition, more parking lots in the development zone would unavoidably cause further clearing of vegetation, a condition which is undesirable in the area. The most appropriate solution would be not to allow the camper's second car or a visitor's car to enter the road system. Therefore, the excavated and abandoned gravel pit, located just within the park's boundary, adjacent to the main control gate, will be made into a parking lot for additional vehicle parking.

Visitors of campers already settled in their campsite, upon arriving at the park's main gate, will be directed to the additional vehicle parking lot where the vehicle will be parked. The camper will be expected to have previously arranged a meeting time and place with his expected visitor either at the additional vehicle parking lot or the park office. If the camper is not at the pre-determined meeting spot, the visitor may proceed to the park office to determine if the camper is actually registered in the park. An employee in the park office will be able to call each sub-office (three calls maximum) to locate the camper. However, this system will not be able to function without pre-registration.

An educational program using newspaper articles and printed handouts to alert campers of this new control will be necessary to facilitate communication and solve the administrative problem.

The parking lot should visually emphasize security so that park visitors who are leaving their vehicles will be more at ease. Access to this proposed additional vehicle parking lot will be from a short road, 120 m long, west of the park's main gate. The gate staff will act as the security for the parking lot.

The following features will be included in the additional vehicle parking lot design:

1. The parking lot will be illuminated.
2. The parking lot will accommodate maximum of 150 cars.
3. Periodic checks of the parking lot by park security will give the lot added protection.

Centralized Garbage System

The cost of maintenance has been rising continually. During July and August it took two maintenance crews a total of 1,050 stops per day to collect the garbage in the park. In order to reduce the work load of the maintenance crew, garbage buildings or containerized units will be located along access roads leading to each campground. The approximate location of each building is indicated in Figure 9.

The system of centralized garbage buildings will function on the basis that each camping group will be given one plastic garbage bag for each day of their stay and the campers will deposit their garbage at the garbage buildings. This system will save both time and money and will allow the maintenance people to work on improving and maintaining the quality of the park.

The following are design criteria for the construction of the garbage building systems:

1. Garbage buildings will be approximately 3 m by 3 m in size, constructed of concrete blocks and painted a dark brown in keeping with park colour standards.
2. Central garbage buildings will be placed at appropriate sites for each of the following locations:
 - along the access road to Kilcoursie Campground
 - along the access road to Beaver Dams Campground and Georgian Campground.
 - close to the subcontrol office of Blind Bay Campground
 - adjacent to both the walk-in and drive-in campsites of Granite Saddle Campground
 - along the Harold's Point Campground entrance road
 - along the entrance road into Lighthouse Point Campground

-adjacent to the parking lot serving the Blind Bay walk-in campsites.

3. These areas should be located on the right side of the road leading out of the campground, wherever possible, to simplify traffic problems.

Wood Yard

The existing wood yard is located opposite the intersection of the Blind Bay Campground access road and the park's main access road. The present wood yard is too small to accommodate both the season's wood supply and the parking area required by the campers. In addition, it is not aesthetically pleasing. Therefore, it will be phased out and relocated.

The abandoned gravel pit situated behind the maintenance and staff area is a more appropriate location because it is well removed from sight. There are two roads providing access to the area, one from the maintenance area and the other from the main access road.

There is one major drawback to this location. The northeastern corner of the area has been zoned as a nature reserve. However, the protection of this area calls for proper fencing around the significant feature. When the fencing is completed, the users will be separated so that the nature reserve is protected and conflicts do not arise.

The following are design criteria for the development of the wood yard:

1. A portion of the gravel pit will be fenced off to make a compound where the firewood will be stored.
2. The southern and southeastern corners of the area will be designated as parking for at least 20 cars.
3. A vegetative screen will be planted along the compound fencing to make it more aesthetically pleasing.
4. The road leading from the maintenance area will function as the supply route to the compound for park staff.
5. The road leading from the main access road will function as the camper's route to the wood yard.
6. Campers will have to walk at least 30 m from their cars to collect wood. This will control the quantity of firewood taken from the wood yard.

Trailer Pump-out Station

The trailer pump-out station is presently located just off the day-use access road. Plans have been approved to relocate this

facility in an area near the park's administrative office just off the main access road. This proposed location will provide better access for everyone. However, as the existing facility is functioning well, the pump-out station will not be relocated until the existing one ceases to function properly.

Boundary Extensions

The Ministry has recently acquired Lot 65, Concession XIII, excluding the shoreline area which is presently owned by cottagers. Attempts to purchase Lot 64, Concession XIII, which lies between the recently acquired lot and the existing park, have been unsuccessful to date. This lot should be purchased in the near future to provide a non-structured picnicking area.

Pre-registration

Pre-registration is a system whereby a camper, upon entering the park, is directed to a campground subcontrol office where he or she registers and from this point, either picks or is assigned to a campsite. This pre-registration system will function like that of motels or hotels. The camper will be obliged to state the expected length of stay at this time. Checkout time would be 2 p.m. on the final day. If a camper wishes to stay longer, he or she must re-register before the 2 p.m. deadline or lose the campsite.

The advantage of such a system is that it will decrease the internal campground vehicle traffic because campers will be directed to their specified campsite. This will make it unnecessary for a camper to drive around the campground looking for a campsite. In addition, the gate personnel at each subcontrol office will know at all times how many campsites are available in their particular campground complex. Therefore, it will be unnecessary for park personnel to patrol the campground roads checking for campers who have not yet registered.

The three campground subcontrol offices will enable Killbear Provincial Park to implement the pre-registration system. However, before such a system can be implemented, all the campsites in the park will be renumbered. The campsite numbering will be updated as each existing campground is redeveloped to prevent confusion.

The following criteria are necessary to facilitate the implementation of the pre-registration system:

1. All campsites will be renumbered.
2. Each subcontrol office will have a map indicating all campsites and their numbers in order to illustrate the campsite vacancies.
3. Maps showing the campground road systems, campsites and numbers should be handed out to the campers to help direct them to the assigned campsite.

Trails

Two additional trail systems have been suggested. Their locations are shown in Figure 9. Blind Bay Trail is one of the new systems. This will be the longest trail in Killbear. It will serve two main functions: to guide walk-in campers to the Blind Bay walk-in campground, and to allow hikers to explore the rocky coastline of Blind Bay.

The other new trail system goes through the nature reserve area situated between the day-use and Kilcoursie Campground areas. Basically, it will be a boardwalk around the perimeter of the swamp. This type of facility will limit the amount of disturbance to the feature that the park user is viewing.

The following are design criteria for the development of the Blind Bay Trail:

1. The first section of the trail, from the parking lot to the Blind Bay walk-in campground, will be an easy hike, avoiding any steep hills, for the benefit of campers carrying their gear into the campground.
2. A proper signage system will be installed directing walk-in campers to the campground and hikers to the rest of the trail.
3. Hikers will be routed around the walk-in campground to eliminate any conflicts between campers and hikers.
4. Markers to guide hikers along the rugged areas of the Blind Bay shoreline will be constructed of rocks in a monument fashion. Interest points along the trail will be marked by numbered plaques fastened onto the rock monuments corresponding to a trail brochure. These rock monuments will not only cut down on maintenance and vandalism but will also conform to the character of the rocky shoreline.
5. Picnic sites will be established in appropriate places along the shoreline section of the trail. The picnic sites noted in Figure 9 are adjacent to small, sandy beach areas.
6. The trail will be self-guided with the help of brochures and signage information emphasizing the vistas and the shoreline's natural development. In addition, it will highlight the historical remains of a logging camp and the new plant communities along the inland portion of the trail which are establishing themselves in the nature reserve area where large dunes once existed.

The following design criteria will facilitate the proper development of the other trail to be named later:

1. Certain sections of the boardwalk will be elevated approximately one metre above ground level for better viewing purposes.
2. The boardwalk will commence from the walkway connecting the day-use area with the Kilcoursie beach area.

3. A trail brochure explaining the significance of the area and its various species will be placed at the beginning of the trail.
4. The self-guided trail may be included in the interpretive program.

Visitor Services Program

Since Killbear Provincial Park is the only natural environment park on the eastern shore of Georgian Bay, it will provide the only opportunity to experience, understand and appreciate the natural, historical, social and recreational values of the area. The visitor services program will enhance this experience through information, interpretation, recreation, out-of-class education and other special visitor services. Assuming an important role in this area, Killbear Provincial Park will be the central focus for the dissemination of visitor services information. Therefore, Killbear will be a nodal park with a visitor centre and a reference source for information about other provincial parks.

Information

The visitor services program will provide the park visitor with introductory information in the form of a park brochure, park newsletter and other publications on the resource base of the park, area management, park facilities, park programs and points of interest outside the park. This information will be made available at the park's visitor centre. The park minifolder will provide general information on the park and its opportunities.

In addition, the weekly park newsletter will deal briefly with specific topics based on park themes and park management as well as providing up-to-date information on what is happening in the park area.

Interpretation

The interpretation element of the visitor services program will make a variety of opportunities available which will help the visitor understand and appreciate the natural and cultural values of the park. Moreover, Killbear will have a nodal visitor services interpretation program for the district. It will provide portable services, audio-visual units and programs which can be used at Sturgeon Bay Provincial Park and Oastler Lake Provincial Park. The themes of the interpretation program will be developed on the following basis:

- Encouraging individual investigation into the appeal and attraction of Georgian Bay.
- Developing and understanding the geological and ecological forces which have shaped the park and the Georgian Bay environment over millions of years.
- Demonstrating how the geological and ecological factors have influenced the human experience from the native peoples to the early explorers and settlers through to the camper and cottager of today.

- Developing an understanding of the economic, recreational and scientific uses of the natural landscape.
- Explaining the reasons for park management and the park system.
- Encouraging and developing a healthy respect and appreciation for the natural environment.

Visitors to Killbear will be exposed to these themes through a variety of media, activities and facility opportunities.

The focus of the interpretive program will be the park's visitor centre. Here, the major park stories will be developed through exhibits, demonstrations, audio-visual shows and communications with the visitor services staff. The centre will also house the offices and work areas for the visitor services staff, making the staff central and accessible to the park visitor.

Since Georgian Bay is the main focus of the park, it would be appropriate to locate the centre in an area overlooking the bay. The redevelopment of Killbear proposes to remove a campsite loop in the Georgian Bay Campground located adjacent to Harold Point Campground. This will create an ideal area for such a facility. The location is adequately accessible.

The existing campsite loop road will become not only a service road but also, on special occasions, the access for bus loads of elderly or handicapped visitors. A trail, capable of handling wheel chairs, will commence from the existing amphitheatre parking lot to the centre. The parking lot for the centre is located outside all three campground subcontrol offices, so it is equally accessible to campers and day-users. Campers and visitors walking the beach will also have access to the centre.

The centre will be designed in such a way that it will take advantage of its attractive shoreline site. The excellent viewing opportunities from this proposed location would enable a visitor to view the sand beaches, the rocky shoreline, the islands and the shipping activities, all typical of Georgian Bay.

Evening programs will be presented at the park amphitheatre. Programs based on the park themes will be presented in audio-visual shows conducted by park staff at central campground locations within Killbear.

A trail system in the park will allow visitors to experience the park landscape and appreciate its values. Hiking trails will range from the short walk around Lighthouse Point to the long Blind Bay Trail. Several trails will offer brochures for self-guided hikes.

Lookout Trail is a long self-guided walking trail with a brochure explaining hardwood forest ecology, glaciation, the Shield and park flora and fauna.

Lighthouse Point Trail is a short self-guided walking trail also used for conducted hikes. The trail guide covers topics relating to man, land and water. Information on the land-water interface, beach ecology and the history of navigation will be included in the trail guide or in the content of conducted hikes.

Twin Points Trail is a medium-length walking trail with a trail guide. It is also suitable for conducted hikes. Topics, such as the history of resource uses (settlement, logging, recreation, etc.), hardwood forest ecology, glaciation and fire ecology, can be illustrated on this trail.

The proposed Kilcoursie Marsh Boardwalk Trail will be a short walking trail through the only marsh in the park. A brochure on wetland ecology will be available to the visitor. This trail could also be used for special hikes (e.g. bird watching hikes) in early summer.

Thompson Trail is a short walking trail which will be used for conducted hikes. Topics to be interpreted are resource use over the years (lumbering, sugaring, recreation) and hardwood forest ecology.

The proposed Blind Bay Trail is a long hiking trail which will require an introductory brochure when the proposed walk-in campsites and picnic sites are developed. A shorter loop at the southern end of the trail will pass a lumber camp, a sandpit, deer range management areas and other interesting natural features of the park. This loop will be available for conducted as well as self-guided hikes. However, there should be a brochure describing man's interaction with the Killbear landscape.

Outdoor Recreation

The programming of outdoor recreation activities, even though they are complementary to the natural resource base of Killbear, will have a lower priority than the other components of the visitor services program.

Instruction and information on hiking and interior camping would commence when the walk-in camping areas became operative.

The most popular recreational activities in the park are beach and water-oriented activities, including swimming, sunbathing, sailing, skin diving and scuba diving. These activities either do not require special instruction, or instruction and equipment are available outside the park.

Self-use recreational facilities (play areas, trails, open spaces) may be provided if the need becomes evident.

Out-of-class Education

The staff at Killbear will continue to provide assistance to visiting school groups when requested. When the visitor services program becomes fully operative, school groups may find it advantageous to visit Killbear. The various media resources of the visitor services program will provide a comprehensive information package.

Staff Development and Park Research

The visitor services staff will strive to make a visitor's stay as enjoyable as possible. This involves continually orienting and educating all park staff to relevant and current information about the park and its surroundings and the best ways to interact with visitors. Any special talents which the staff may have for writing, drawing, etc. may be used to provide a more personal visitor services program.

Research will also be conducted by visitor services staff into the natural, cultural and historical values of the park. Recreation research may also be undertaken to evaluate the suitability of present programs, the satisfaction of the park visitors and visitors' activity patterns.

Special Visitor Services

Visitor services will also involve programming for events that are not on a regular schedule. Events such as visits by government officials, demonstrations by local residents, events in the area (regatta, fairs, etc.) and special activities in the park, such as birding hikes in early summer, bicycle hikes and activities put on by other branches of the Ministry, will be incorporated into the programming when feasible.

Facility Development

Visitor Centre

The optimum location for this facility would be overlooking Georgian Bay. The site considered to be the most feasible is shown in Figure 9. The design of the building should be complementary to the surrounding landscape. It would have a glassed wall on the side overlooking the bay. The sanitary facilities to be provided for the visitors will be the two existing vault privies situated adjacent to the proposed location of the visitor centre. The building specifications are as follows:

overall	116	sq m
exhibits	74	sq m
office	18.5	sq m
film viewing and storage	14	sq m
laboratory and washroom	9.3	sq m

Amphitheatre

This facility will be left in its present location, but some alterations will have to be made. The landscaping in the area will be improved by the addition of indigenous vegetation. The viewing screen should be raised approximately 1.5 m to allow visitors sitting in the back seats to view the screen more easily.

Publications

The Killbear Provincial Park brochures and publications will be redesigned in accordance with the new specifications designated by the graphic design group at main office. For the future publication of newsletters, the single-fold format, similar to the style implemented at other parks, will be used. New trail guides are needed for Lookout Trail, Blind Bay Trail-Short Loop, Kilcoursie Marsh Boardwalk Trail and Twin Points Trail. Adequate research on each trail must be done prior to the designing of any guide.

Trail Development

The proper marking, brushing and construction of trails and parking lots are necessary for the new Kilcoursie Marsh Boardwalk Trail and Blind Bay Trail.

Audio-visual Equipment

The equipment for the interpretive program includes one portable audio-visual unit, a 35 mm camera and others as required.

Maintenance And Management

Access Zone

The following are management and maintenance criteria to be practiced in the access zone:

1. Ground cover will be allowed to grow up to the edge of the road surface, but no higher than 30 cm within 1.5 m of the edge of the road surface.
2. Trees will be allowed to grow within 1.5 m of the road, except at sharp corners where good visibility is necessary.
3. Any vegetation to be planted along the roads will be native to the area.

Development Zone

The following are maintenance and management criteria to be practiced within the park's development zone:

1. The day-use parking lot area is the only area exhibiting a large expanse of grass in the park. This grass will not be allowed to grow more than 14 cm in height.
2. In any future developed grass areas adjacent to the new main entrance area or the three campground sub-offices, the grass will not be allowed to grow more than 7 cm in height. Shorter or slow-growing grass species should be used to minimize maintenance.
3. All gravel roads in the campgrounds will be treated to reduce the dust problem.
4. Any dead trees or limbs, located in such a way as to prove dangerous to human life and property, should be removed and any usable wood placed in the wood yards.
5. All trails and paths located within the development zone which show signs of compaction and associated disturbance problems will be covered with wood chips to help alleviate the problems.
6. A continuous replanting program is mandatory to rehabilitate buffers between campsites and fill in unused open areas created after redevelopment. Aesthetics must also be taken into account. Species indigenous to the area must be used.
7. Once the campsite rotation system is in effect, any campsites needing a rest from overuse will be closed off and completely replanted with local species of ground cover, shrubs and trees. The length

of time the campsite would be closed will depend upon the success of the vegetation regrowth. Fertilization, scarification of compacted surface soils and watering will help speed up the process.

8. The present dump located just inside the park is near capacity now and will be closed and rehabilitated. All garbage generated by the park will be transported and deposited in the township dump. No garbage will be dumped within the park's boundaries.

Nature Reserve Zone

The following are management and maintenance criteria to be practiced in the nature reserve zone:

1. All trails will be monitored for signs of compaction and deterioration. Should the situation arise, the trails will be redesigned using boardwalks and woodchips or relocated altogether to allow regeneration of the vegetation.
2. All sign posts showing directions and points of interest will be anchored in concrete to discourage vandalism.
3. The manipulation of the vegetation for deer range management will not be permitted in the nature reserve zone.
4. Pest control sprays or any other chemicals will not be used to control pests such as spruce budworm, tent caterpillar, etc.
5. Since the park area is not very large, fire control is necessary for safety reasons.
6. No facilities will be built in the nature reserve zone except trails and markers.

Natural Environment Zone

The following are maintenance and management criteria to be practiced in the natural environment zone:

1. The deer yard management program, which creates browse areas, will be allowed to continue at its present level. However, no additional development of browse areas will be permitted.
2. All building material, such as sand and gravel, will be obtained outside the park and not extracted from the natural environment zone.
3. The natural environment zone will be protected from any development other than that necessary for the trail facilities.
4. Any trails located in this zone are to be maintained similarly to those in the nature reserve zone.
5. The use of insect sprays or other chemicals are prohibited except in extreme cases of insect infestation. Such a situation will be

handled at the discretion of the park superintendent and district staff.

6. Fire control is important for visitor safety.

Historical Zone

The following are maintenance and management practices for the historical zone:

1. The existing historical zone will be maintained in its present state.
2. All descriptive plaques will be set in concrete to discourage vandalism.

Special Management Programs

Deer Range Management

A deer range management program has been in operation in Killbear Provincial Park for the past 12 years. This was the first attempt in Ontario to manipulate range areas for the management of deer populations. Historically, it has proven to be reasonably successful and may be included in the interpretive program.

The program provides winter feed for deer by clear cutting small areas of hardwoods (approximately 0.04 ha) adjacent to stands of hemlock and sometimes cedar (Figure 10). This clear-cutting method stimulates new growth of young trees which are browse and winter food for the deer. There is a total of 14 ha of park area now being treated for the production of browse.

The main objective of this program is to provide a better supply of deer for recreational hunting outside the park's boundaries. The Fish and Wildlife Branch estimates that the existing program supports between 250 and 300 deer.

The Fish and Wildlife Branch of the Ontario Ministry of Natural Resources prepared a proposal which called for an increase in the area of treated browse from 14 ha to 30 ha. The Branch feels that this expansion will support an additional 100 deer, which would bring the total population of this management area to between 350 and 400 deer. This would mean that a 100 percent increase in the browse area would result in 33 to 40 percent increase in the deer population.

The park staff does not feel justified in endorsing a program which involves increasing resource manipulation to a level contradictory to the Provincial Park Policy and which produces benefits at a diminishing rate of return. Therefore, no expansion of the program will be allowed within the park boundaries. Rather, the deer range management program will remain as it is today. The areas which have

undergone treatment in the past will be the only areas which will be treated in the future (Figure 10).

Vegetation Management

There are certain management techniques which must be applied to maintain a particular kind and quality of vegetation in a given area in the park. Zones with vegetation progressing through natural succession will have different management techniques from zones where vegetation is maintained at its present stage of natural succession.

Some management practices will produce quantities of wood as by-products of dead tree removal and selective tree removal. The wood, depending on the type and quality, can be used for firewood, saw logs, posts, etc. This could eventually lead to savings in both maintenance and capital costs. However, it should be remembered that the main purpose of these management techniques is to maintain or create a particular quality of vegetation and not to generate revenue.

Below is a general description of the type of vegetation cover desired for each zone in the park. From this description a forester should be able to form a vegetation management plan for the entire park and thus maintain the park's quality.

Development Zone, D1; Day-use Area: The area being used for picnicking should have a park-like appearance (i.e. a tall overstory of existing tree species, nicely spaced, with very little understory). The fringe areas which are not used will be maintained in their present stage of succession, with a fairly thick understory, to maintain the existing overstory mixture.





Development Zone, D2, D3, D4, D5 and D8; Campgrounds: The existing overstory mixture of species should remain the same. A good heavy understory will be maintained between campsites to ensure the future of the overstory and maintain privacy between campsites. Methods should be devised to ensure quick vegetation regeneration along abandoned roads and campsites after redevelopment.

Development Zone, D6 and D7; Maintenance, Administration and Staff Area: The vegetation cover will be maintained in its present form, with a fairly high, thick overstory with a fairly thick understory, for the purposes of maintaining a visual screen between facilities and park visitor. This, of course, excludes the entrance gate and the main park office. A park-like setting, similar to that proposed for the day-use area, should surround the buildings.

Nature Reserve Zone, NR1 and NR2: The vegetation of these two areas will be allowed to progress through natural succession. NR2, an area of hardwoods, has a high percentage of small balsam undergrowth. The progress of its succession should be documented. Much of NR1 was burned over in fairly recent times, and its progress through succession should also be documented.

Figure 10

Deer Range Management

-  Existing park boundary
-  Excellent shelter area
-  Good shelter area
-  Deer range management area



Nature Reserve Zone, NR3, NR4, NR5, NR7: Each of these areas will be managed to maintain the present vegetation type. It is very important that NR3 and NR5 maintain their present water characteristics. This is vital for maintaining present animal inhabitants and vegetation cover. The NR4 area will require various types of management techniques because of the variety in vegetative types, which range from the black spruce swamp vegetation to the limited species of the exposed rock shoreline.

Nature Reserve Zone, NR6; Maintenance Area Gravel Pit: The area is to be maintained as is for the purposes of scientific research only. Unauthorized persons will be restricted from the area.

Natural Environment Zone: The vegetation in the natural environment zone will be maintained at its existing stage. In addition, deer range management will be allowed only in the areas which have been treated before.

Historical Zone: The historical zone will try to maintain the vegetation as it was during the time of the historical feature. For example, HZ1, the area of the Thompson cabins, should have a good stand of maple depicting the sugar maple industry of the area.

Cost Estimates and Phasing

Cost Estimates of Proposed Development and Redevelopment

The following is the estimated costs for the redevelopment of existing campgrounds at an average cost of \$500 per site (1975 dollars):

Kilcoursie	112 sites	\$ 56,000
Beaver Dams	110 sites	55,000
Georgian	45 sites	22,500
Harold's Point	80 sites	40,000
Granite Saddle	25 sites	12,500
Lighthouse	180 sites	90,000
Blind Bay	180 sites	90,000
Sub-total		<hr/> \$366,000

The following estimated costs for new campground development are calculated on the basis of \$1,500 per walk-in campsite and \$2,000 per auto campsite (1975 dollars):

Blind Bay Walk-in Campground	20 sites	\$ 30,000
Granite Saddle Walk-in Campground	15 sites	22,500
Lighthouse Extension	100 sites	200,000
Sub-total		<hr/> \$252,500

The estimated costs for the development of facilities is as follows (1975 dollars):

Open space areas (five areas at \$1,000 each)	\$ 5,000
Showers, comfort stations -	
To modify: two Type 8 (eight showers) at Lighthouse	30,000
two Type 8 (eight showers) at Blind Bay	30,000
To build: one Type 8LS (four showers) at Kilcoursie	45,000
one Type 8LS (four showers) at Beaver Dams	45,000
one Type 9LS (two showers) at Harold Point's	30,000
Parking lot for second vehicles	10,000
Park entrance complex	25,000
Buoyed swimming areas	5,000
Centralized garbage buildings (six at \$3000 each)	18,000
Gargage building and small wood yard	3,000
	<hr/> \$246,000

The estimated cost of day-use area development is as follows (1975 dollars):

Day-use area	\$ 10,000
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The estimated cost of the hiking and walking trail development is (1975 dollars):

Trails	\$ 14,000
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The estimated cost of the visitor services program facilities is as follows (1975 dollars):

Interpretive building (115 sq m) and display	\$ 55,000
Amphitheatre modifications	5,000
Portable audio-visual unit	10,000
	<hr/>
Sub-total	\$ 70,000
	<hr/>
Total	\$ 958,500
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Phasing Program

The Killbear development and redevelopment plan has been phased out over two time spans: a realistic eight-stage phasing program and and idealistic five-stage phasing program.

All development or redevelopment schemes which should be carried out during the fall and spring of a particular year are noted in each phasing program. This applies to any campground redevelopment where it is important not to lose the services of any one campground during the peak times of July and August. The figures indicate 100 percent completion unless otherwise stated and are quoted in 1975 dollars.

Eight-Stage Phasing Program

Phase 1

Kilcoursie Campground redevelopment (fall-spring)	\$ 56,000
Park entrance complex (fall-spring)	25,000
Parking lot for second vehicle	10,000
Garbage buildings: Kilcoursie, Beaver Dams and Georgian	6,000
Buoyed swimming areas	5,000
Day-use development (fall-spring)	10,000
Garbage building: Blind Bay	3,000
	<hr/>
	\$ 115,000

Phase 2

Shower: Type 8LS comfort station at Kilcoursie	45,000
Granite Saddle Walk-in Campground development (10 sites)	15,000
Lighthouse Campground extension development (40 percent completion)	80,000
Garbage building: Lighthouse	3,000
	<hr/>
	\$ 143,000

Phase 3

Beaver Dams Campground (fall-spring)	\$ 55,000
Georgian Campground redevelopment (fall-spring)	22,500
Shower: Type 8LS comfort station at Beaver Dams	45,000
Hiking and walking trail development	4,200
Modification of one Type 8 comfort station at Lighthouse	15,000
	<hr/>
	\$ 141,700

Phase 4

Harold's Point Campground redevelopment (fall-spring)	\$ 40,000
Interpretive centre	55,000
Garbage building: Harold's Point	3,000
Shower: Type 9LS comfort station at Harold's Point	30,000
Modification of one Type 8 comfort station at Lighthouse	15,000
	<hr/>
	\$ 143,000

Phase 5

Granite Saddle Campground redevelopment (fall-spring)	\$ 12,500
Granite Saddle Walk-in Campground development (completion)	7,500
Lighthouse Campground extension development (30 percent completion)	60,000
Modification of two Type 8 comfort stations at Blind Bay	30,000
Garbage building: Granite Saddle	3,000
Raised amphitheatre screen	5,000
Portable audio-visual unit	10,000
	<hr/>
	\$ 128,000

Phase 6

Lighthouse Campground redevelopment (fall-spring)	90,000
Lighthouse Campground extension (25 percent completion)	50,000
	<hr/>
	\$ 140,000

Phase 7

Lighthouse Campground extension development (completion)	\$ 10,000
Hiking and walking trail development (completion)	9,800
Blind Bay Walk-in Campground development	30,000
Garbage building, woodlot and walk-in parking lot for Blind Bay	3,000
Open space areas	5,000
	<hr/>
	\$ 57,800

Phase 8

Blind Bay Campground redevelopment (fall-spring)	\$ 90,000
Total Development Expenditure	<u>\$ 958,500</u>

Campsite Availability

The campsite availability, as a result of the eight-stage development plan, based on the present number of campsites (960), is as follows:

Phase 1

Number of sites increased	0
Number of sites decreased	17
Total number of sites in the park	943
Total number of sites available	943

Phase 2

Number of sites increased	50
Number of sites unavailable	40
Number of sites decreased	0
Total number of sites in the park	993
Total number of sites available	953

Phase 3

Number of sites increased	0
Number of sites made available	40
Number of sites decreased	88
Total number of sites in the park	905
Total number of sites available	905

Phase 4

Number of sites increased	0
Number of sites decreased	50
Total number of sites in the park	855
Total number of sites available	855

Phase 5

Number of sites increased	35
Number of sites decreased	35
Total number of sites in the park	855
Number of sites held for future rotation purposes (from Lighthouse Campground extension)	30
Total number of sites available	825

Phase 6

Number of sites increased	25
Number of sites decreased	44
Total number of sites in the park	836
Number of sites held for future rotation purposes (from Lighthouse Campground extension)	35
Total number of sites available	801

Phase 7

Number of sites increased	25
Number of sites decreased	0
Total number of sites in the park	861
Number of sites held for future rotation purposes (25 from Phase 6 + 15 more from Lighthouse extension)	40
Total number of sites available	821

Phase 8

Number of sites increased	0
Number of sites decreased	1
Total number of sites in the park	860
Number of sites held for future rotation purposes	40
Total number of sites available	820

Five-Stage Phasing Program (1975 dollars)

Phase 1

Kilcoursie Campground redevelopment (fall-spring)	\$ 56,000
Park entrance complex (fall-spring)	25,000
Parking lot for second vehicle	10,000
Two garbage buildings: Kilcoursie Campground and Beaver Dams-Georgian Bay Campground	6,000
Buoyed swimming areas	5,000
Day-use development (fall-spring)	10,000
Garbage building: Blind Bay	3,000
Shower: Type 8LS comfort station at Kilcoursie	45,000
Granite Saddle Walk-in Campground development	22,500
Garbage building: Lighthouse	3,000
Garbage building: Granite Saddle	3,000
	<hr/>
	\$ 188,500

Phase 2

Lighthouse Campground extension development (40% completion)	80,000
Beaver Dams Campground redevelopment (fall-spring)	55,000
Shower: Type 8LS comfort station at Beaver Dams	45,000
Georgian Campground redevelopment (fall-spring)	22,500
	<hr/>
	\$ 202,500

Phase 3

Modification of two Type 8 comfort stations at Lighthouse	30,000
Harold Point Campground redevelopment (fall-spring)	40,000
Shower: Type 9LS comfort station at Harold's Point	30,000
Lighthouse Campground extension development	60,000
Garbage building: Harold Point	3,000
Interpretive centre	55,000
	<hr/>
	\$ 218,000

Phase 4

Modification of two Type 8 comfort station (Blind Bay)	\$ 30,000
Granite Saddle Campground redevelopment	12,500
Lighthouse Campground extension development (completion)	60,000
Hiking and walking trail development	14,000
Blind Bay Walk-in Campground development	30,000
Garbage and woodlot (small) (Blind Bay Walk-in Campground parking lot)	3,000
Open space areas	5,000
Raised amphitheatre screen	5,000
Portable audio-visual unit	10,000
	<hr/>
	\$ 169,500

Phase 5

Lighthouse Campground redevelopment (fall-spring)	90,000
Blind Bay Campground redevelopment (fall-spring)	90,000
	<hr/>
	\$ 180,000
Total Development Expenditures	<u>\$ 958,500</u>

Campsite Availability

The campsite availability, as a result of the five-stage development plan, based on the present number of sites of 960, is as follows:

Phase 1

Number of campsites increased	15
Number of campsites decreased	17
Total number of sites in the park	958
Total number of sites available	958

Phase 2

Number of campsites increased	40
Number of campsites decreased	88
Total number of sites in the park	910
Total number of sites available	910

Phase 3

Number of campsites increased	30
Number of campsites decreased	50
Total number of sites in the park	890
Number of sites held for future rotation purposes (from Lighthouse Campground extension)	10
Total number of sites available	880

Phase 4

Number of campsites increased	50
Number of campsites decreased	35
Total number of sites in the park	905
Number of sites held for future rotation purposes (from Lighthouse Campground extension)	40
Total number of sites available	865

Phase 5

Number of campsites increased	0
Number of campsites decreased	45
Total number of sites in the park	860
Number of sites held for future rotation purposes	40
Total number of sites available	820

Staff Requirements

With the existing maintenance and operating money cut-backs, it is necessary to take a close look at the current park staff requirements for specific operations and predict the future requirements.

Complement Staff

As the park's size and operation is extensive, it is necessary to have a park superintendent, a foreman or assistant superintendent and a clerk as complement staff. This is the existing level of staffing.

Seasonal Staff

Garbage Collection

During the peak period of July and August, the garbage collection crew makes a total of 1,050 stops per day. Currently, the park has an eleven-man crew with nine men available each day. These nine men are divided up into two crews of five men and four men, with one of the men spending three hours per day cleaning beaches.

However, with the construction of centralized garbage buildings, the number of stops per day will be drastically reduced and will, inturn, reduce the manpower requirements. A five-man crew will be sufficient to run a seven-day week operation. The current work force would then be used for other maintenance duties to maintain the park quality.

Shifts

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.	Total Man/Days	Staff
Numbers	3	3	3	3	3	3	3	21	5

Sanitation

There is now a work force of eight men carrying out sanitary duties in the park. There has been a request to increase the work force by two men to compensate for sick days and to permit the cleaning of some units twice a day. However, because of monetary cut-backs, the requested work force increase is not feasible. Manpower involved in other duties, such as beach patrol or gate checkers, could, however, be utilized at slack times or in times of emergency.

Plumbing, Electrical, Carpentry

Presently, there are two men making up the work force. This will not be changed.

Cooks

This operation has a three-man work force and will be maintained at this level.

Naturalists

There should be a staff of four managing the visitor services program. However, this increase in the visitor services personnel will not take place until the visitor services program is expanded and the new visitor centre is operative.

Beach Maintenance

There is one man in charge of beach patrol. This man can also be utilized in other maintenance operations (i.e. sanitation).

Security

Currently, there is a six-man work force on security. There has been a request for an additional two men to be placed on staff. However, with the introduction of pre-registration, some of the existing security problems may be alleviated, and it is anticipated that the extra personnel will not be necessary.

Day Checker

There is one man responsible for day checking on day security. It may be advantageous to increase this work force by two men. The day checkers may be able to stop potential evening problems and early drinking parties.

Office Staff

There is now a three-man work force undertaking duties in the main park office. However, with a full time clerk stationed in the office, a two-man work force would be more appropriate.

Permit Sellers

There is now a 21-man work force staffing the main gate and the three park sub-offices. This work force should be maintained to meet the pressures of use.

Traffic Checkers

Traffic checkers are necessary only at the main gate to check the permits of people leaving the park. This requires a staff of four.

Night Watchmen

There is now a five-man work force responsible for night watchmen duties. This work force will be maintained.

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Ministry of
Natural
Resources

Hon. Frank S. Miller
Minister

Dr. J. K. Reynolds
Deputy Minister

September, 1977

